Reporting to **Nova Scotians**

on Comparable Health and Health System Indicators

Executive Summary

September 30, 2002

This report is consistent with the Federal/Provincial/Territorial agreement by the Ministers of Health to report on comparable health indicators.

NOVA SCOTIA
Department of Health

http://www.gov.ns.ca/health

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Introduction

In September 2000, Canada's health ministers were directed by their Premiers to report to the public on a regular basis about health system performance.

A nationwide group led by Alberta came up with a list of 14 indicator areas to be used in performance reporting by each government. Within each of these areas, a number of specific indicators were identified for the report. A total of 67 distinct indicators were selected for comparable reporting. A complete list of the 14 indicator areas and summaries of their results is presented on the following pages, and a complete list of the 67 indicators can be found in the "Reporting to Nova Scotians on Comparable Health and Health System Indicators: Technical Report." These reports can be obtained by contacting the Performance Measurement and Health Informatics section of the Nova Scotia Department of Health or by visiting our website at http://www.gov.ns.ca/health/pirc/ .

This report should be viewed as one step in a continuing effort to establish national standards to describe the health of Canadians.

A New Report - Just One Part of Nova Scotia's Health Reporting Strategy

Reports on health system performance are not new. This is not the first time that Nova Scotia has reported health system data to the public. The Department of Health, health providers, health organizations, researchers, the Canadian Institute for Health Information (CIHI), and Statistics Canada all produce regular reports on various aspects of health and the health system.

However, this report is different. It's the first cooperative effort between federal, provincial, and territorial governments to report to their own citizens on health system performance using the same set of comparable indicators. This new process will improve Nova Scotia's ability to gather useful health care data and report health system performance to its residents along with comparisons to other provinces and territories. Another exciting new development is the participation of the Office of the Auditor General of Nova Scotia. At the request of the Department of Health, the Auditor General provided third-party verification of the report's accuracy, ensuring that Nova Scotians and other Canadians receive the best possible information about health system performance. The Auditor's Report can be found at the beginning of the companion Technical Report.

A great deal has been accomplished, but there is more work to do before the next report is released in two years. No province or territory was able to report on all 67 indicators. In some cases, they may not yet collect information for a specific indicator. In other cases, they may not yet have enough data for reliable reporting on some indicators. For example, one of the indicators in this report relates to the number of patients waiting for coronary artery bypass graft surgery. While Nova Scotia is able to report this information, more than half the provinces and territories in Canada are not.

Each jurisdiction, including Nova Scotia, is committed to improving its ability to report on every indicator, as well as developing new indicators for future reports. The ability to collect and use health care data has been a priority for the Nova Scotia Department of Health. The Department has invested in a range of information technology projects to improve the collection, management, and use of data. These initiatives include everything from the collection and analysis of information by Emergency Health Services to improve pre-hospital emergency medical care, to the development of Canada's first province-wide Hospital Information System. These investments are vital to effectively managing our health care system and improving health care for Nova Scotians.

What is a Health Indicator?

A health indicator is simply a measurement and reporting tool. Individual indicators or groups of indicators are used to help monitor, evaluate, and improve health programs and services. They provide information about the health system's performance by highlighting areas that need improvement. The right group of indicators can provide a valuable snapshot of the performance of a health care system.

The data come from many sources – the province and our health care facilities, Health Canada, Statistics Canada, and the Canadian Institute for Health Information (CIHI). Statistics Canada is the official government source for Canadian social and economic data like births, deaths, and census information. The Canadian Institute for Health Information (CIHI) is an independent not-for-profit organization working to compile and report quality, reliable, and timely health information collected by hospitals and other sources.

How will the Information be Used?

The information will be useful for health care planners and providers, but it is also allows the public to see how Nova Scotia is doing compared to the rest of Canada. The report is part of the responsibility of government to inform its public about the management and performance of the health care system.

The Nova Scotia government believes that health decisions must be based on good evidence. This report reminds us that health information systems are necessary to collect the data that allows us to make evidence-based decisions. Having the right health information allows us to understand what is happening in our health care system. This helps us to properly manage and improve the programs and services needed to provide better patient care.

Nova Scotia is committed to improving health programs and services and the health of its residents. Improving the ability to collect, analyze, and use health information will help us to act on that commitment.

What Does Each Indicator Area Tell Us?

The 14 indicator areas focus on three important topics: the health of the population, the quality of health services, and the health outcomes or results that are achieved by the health system. The accompanying Technical Report lists all 67 indicators with Nova Scotia's position compared to the rest of Canada. Some analysis is provided in the Technical Report to help explain the indicator information, and more detailed descriptions of the numbers can be found in the accompanying analytic Highlights and Discussion report.

A summary statement for each of the indicator areas is found below. Not surprisingly, there are far more similarities than differences between Nova Scotia and the rest of Canada:

Life Expectancy

The number of years a person would be expected to live (Life Expectancy) and the number of years an average individual would be expected to live without moderate or severe disabilities (Disability-Free Life Expectancy) are widely used indicators of the health of a population. While the average Nova Scotian will live just as long as other Canadians, he or she may experience short- or long-term disabilities up to three years sooner.

Infant Mortality

The number of infants who die in the first year of life is a well-established measure of child health as well as the well-being of a society. It reflects the health status and health care of a population, the effectiveness of preventive care, and the attention paid to maternal and child health, as well as broader social factors such as maternal education, smoking, and relative deprivation. Rates for Nova Scotia and Canada are similar and have declined overall.

Low Birth Weight

Low birth weight is an indicator of the general health of newborns, and a key determinant of infant survival, health, and development. Low birth weight infants are at a greater risk of dying during the first year of life, and, if they survive, they have a greater risk of disability and diseases such as cerebral palsy, visual problems, learning disabilities, and respiratory problems. Again, rates for Nova Scotia and Canada are similar and have both declined overall.

Self-Reported Health

Self-reported health is a general indicator of the overall health status of individuals. The percentage of Nova Scotians and Canadians reporting excellent or very good health has declined in the past few years. This may reflecting a better understanding of health issues, which changes the way people view and report on their own health.

Change in Life Expectancy

There are effective ways to prevent or treat many of those illnesses that cause the most deaths. Decreases in death rates and increases in survival rates for these illnesses may be evidence of the long-term success of prevention and treatment strategies. While survival rates five years after breast, prostate, and lung cancer diagnoses are similar across the country, overall death rates due to these illnesses are significantly higher in Nova Scotia than in Canada as a whole. The colorectal cancer mortality rate in Nova Scotia, on the other hand, has dropped almost in half and is lower than the national rate.

4 Improved Quality of Life

The intended outcome of most elective surgery is improved health-related quality of life. Nova Scotia has the highest number of hip and knee replacements of any province in Canada.

Reduced Burden of Disease, Illness, and Injury

Incidence rates measure the numbers of new illnesses and are an indicator of population health and well-being and the success of preventive programs. While Nova Scotia fares well in most of these areas, it appears that the percentage of people with diabetes in Nova Scotia is higher than in Canada as a whole.

Waiting Times for Key Diagnostic and Treatment Services

The systematic collection and reporting of wait time data is very complex and is relatively new in Canada. Governments and health system leaders have a role in keeping wait times for services under control by ensuring effective management of wait lists, operating room schedules, hospital beds use strategies, and treatments. Efforts to collect data on waits for knee and hip replacement surgeries are still underway.

Wait time information was available for Coronary Artery Bypass Graft (CABG), a specific type of heart bypass surgery. All patients who are in immediate danger of death or disability, and who can be operated on safely, are treated immediately or within 24 hours. At the end of 2001/2002 about 32 percent of patients with non-urgent illnesses in Nova Scotia were treated within two weeks, 25 percent were treated within a month and a half, another 36 percent were treated within six months, and just 8 percent waited longer. These are averages. In fact, wait times for this particular surgery improved as the year progressed.

Patient Satisfaction

Members of the adult population were asked in a Statistics Canada survey to rate their satisfaction with any health care services they received in the past year. A high proportion of Nova Scotians - 80 percent - were satisfied with hospital services received. A similar high rating was found for Canada as a whole. Even more Nova Scotians and Canadians – 91 percent – were satisfied with services provided by family doctors and other physicians. Nova Scotians were significantly more satisfied than Canadians overall with community-based health care services such as home-based therapy, nursing and personal care, and walk-in clinics.

Hospital Readmission for Selected Conditions

Hospital readmission rates for specific illnesses show how many patients had to return to hospital shortly after being discharged. This is one way to assess the quality of care. The readmission rate following hospitalizations for pneumonia was very low across Canada. For acute myocardial infarctions, the readmission rate after discharge was also similar across Canada. The Nova Scotia rate improved from over nine percent in 1997 to just seven percent in 1999.

Access to 24/7 First Contact Health Services

First contact health services include information, advice, and direct treatment services obtained through initial contact with the health system to meet immediate or routine health care needs. Nova Scotia is reporting on response time for ground ambulance calls. We are recognized as having the best ambulance service in Canada, and the majority of emergency calls – 66 percent – result in an ambulance arriving at the scene within nine minutes or less.

Home and Community Care Services

In recent years, governments have supported programs to deliver some health services to people in their homes, as an alternative to admitting people to hospital or nursing homes. As more home care programs are started, it is expected that these services will be provided to increasing numbers of people. Each year during the period 1996 to 2001, just over one percent of the Nova Scotia population was admitted for new home care services.

Public Health Surveillance and Protection

We are reporting on several illnesses that are transmitted through water, food, air, sexual contact, or drug use involving needles (IV drug use). In addition, we are reporting on exposure to second-hand tobacco smoke to show how the effective the public health system is in protecting non-smokers. About 32 per cent of the Nova Scotian population was routinely exposed to second hand smoke in 2000. This is one of the highest rates across the country, but it is expected to improve as the Comprehensive Tobacco Strategy and the new Anti-Smoking Legislation introduced this year are rolled out.

Health Promotion and Disease Prevention

Regular physical activity is associated with a range of health benefits, and obesity is a major risk factor for chronic illnesses like diabetes and heart disease. While we are as active as other Canadians according to a Statistics Canada survey, significantly more people in Nova Scotia are obese than in Canada as a whole.

Tobacco use is the leading cause of preventable illness and death in Canada. While Nova Scotia has frequently been cited as rating poorly in this category over the past couple of years, we are about the same as Canada as a whole, with about 19 percent of teenagers smoking.

More seniors receive influenza immunizations in Nova Scotia than in Canada overall. With 66 percent of all seniors receiving a flu shot in 2000, we had the second-highest rate in the country.

The Future

This report will be repeated every two years. All provinces and territories and the federal government will be working to improve the next report. Ministers have also agreed to consult with the public on the indicators used in their reports. They will seek your advice on which indicators are most important to you to see in future reports.

Ministers of Health are committed to developing new and better comparable indicators of health system performance. More work has to be done in the area of access and wait time information, as well as information on the outcomes of health care services. It is also important that each province and territory work to ensure that its data are accurate, complete, and appropriate.

This report is a good first start. We look forward to a second, more complete report in 2004.

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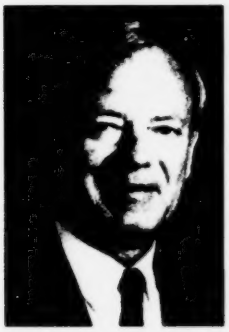
Letter from the Minister



Two years ago, health ministers from across Canada were directed by our premiers to address the need for comparable health information in Canada. The premiers agreed that cooperation between jurisdictions was essential to reach their goal. A nationwide group led by Alberta developed 14 indicator areas to be used in performance reporting by each government. Within each of these areas, a number of specific indicators were identified for this report.

While comparisons between jurisdictions are a way to achieve some accountability, problems arise when trying to compare health information collected in different ways. This report attempts to address these problems by presenting comparable information from a number of standard indicators that reflect the performance of the health care system in each jurisdiction.

Nova Scotians expect that a health report like this will help make government more accountable. Thus, this information will be useful not only for health care planners and providers, but also for the public, which deserves to know how its province or territory compares to the rest of Canada. Not surprisingly, in the results for all of the areas measured, there are far more similarities than differences between Nova Scotia and the rest of Canada.

This report is a reminder of the necessity for health information systems. It is extremely important that we are able to collect and utilize health care data to support the management of the health care system. It has been a priority for us in Nova Scotia to invest in a range of information management and information technology initiatives, not only because it plays a vital role in the management of our health care system, but also because it helps us deliver better health care to Nova Scotians. If we lack the infrastructure to collect data and to understand what is happening in our health care system, then we miss an opportunity to improve programs and services and to provide better patient care.

This report is a first step, not just for us, but for the entire country. A great deal has been accomplished, and we will be working hard to make sure we can produce a more complete report in two years' time.

Jamie Muir

Honourable Jamie Muir
Minister of Health

Acknowledgements

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Introduction

In September 2000, Canada's health ministers were directed to provide the public with regular reporting on health system performance. These reports would allow for accurate comparisons between jurisdictions across Canada. An intergovernmental group, chaired by Alberta, came up with a list of comparable indicators to be used in performance reporting by each government. The following report was prepared using a set of 67 distinct indicators in 14 indicator areas. They are:

- Life expectancy
- Infant mortality
- Low birth rate
- Self-reported health
- Change in life expectancy
- Improved quality of life
- Reduced burden of disease, illness and injury
- Waiting times for key diagnostic and treatment services
- Patient satisfaction
- Hospital re-admission for selected conditions
- Access to 24/7 first contact health services
- Home and community care services
- Public health surveillance and protection
- Health promotion and disease prevention

This is not the first time that Nova Scotia has reported health system data to the public. The Department of Health, health providers and health organizations, researchers, and the Canadian Institute for Health Information (CIHI) and Statistics Canada produce regular reports on various aspects of health and the health system.

However, this report is different. It's the first cooperative effort between federal, provincial and territorial governments to report to their own citizens on health system performance using a common set of comparable indicators. This new process will improve Nova Scotia's ability to gather useful health care data, report health system performance to our residents, and compare our performance with that of other jurisdictions. Another exciting new development is the participation of the Office of the Auditor General of Nova Scotia. At the request of the Department of Health, the Auditor General provided third-party verification of the report's accuracy, ensuring that Nova Scotians and other Canadians receive the best possible information about health system performance. The Auditor's Report can be found at the beginning of the companion Technical Report, which can be obtained by contacting the Performance Measurement and Health Informatics section of the Nova Scotia Department of Health or by visiting our website at http://www.gov.ns.ca/health/pirc .

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8 Not surprisingly, there are far more similarities than differences between Nova Scotia and the other jurisdictions. A number of indicators are highlighted in this report - some because there is a statistically significant difference between the results for Nova Scotia and the rest of Canada, and some because there has been an interesting trend over time for a particular indicator for Nova Scotia and other jurisdictions. National health care issues such as primary care, wait times, smoking, physical activity, and obesity are also highlighted.

There is more work to do before the next report is released in two years. No province or territory was able to report on all 67 indicators, often because data required for certain indicators were insufficient or not available. For example, one indicator in this report shows the number of patients waiting for coronary artery bypass graft surgery. While Nova Scotia is able to report this information, more than half the provinces and territories in Canada are not yet able to provide any comparable data.

Each jurisdiction, including Nova Scotia, is committed to improving its ability to report on all 67 indicators and developing new indicators for future reports. Improved collection and use of health care data has been a priority for the Nova Scotia Department of Health. The Department has invested in a range of information technology projects to improve the collection, management, and use of data. These initiatives include the collection and analysis of information by Emergency Health Services to improve pre-hospital emergency medical care, to the development of Canada's first province-wide Hospital Information System. These investments are vital to effectively managing our health care system, and improving health care for Nova Scotians.

What is a health indicator?

A health indicator is simply a measurement and reporting tool. Individual indicators or groups of indicators are used to help monitor, evaluate and improve health programs and services. They provide information about the health system's performance by highlighting areas that need improvement. The right group of indicators can provide a valuable snapshot of the performance of a health care system.

The data come from many sources – the province and our health care facilities, Health Canada, Statistics Canada, and the Canadian Institute for Health Information (CIHI). Statistics Canada is the official government source for Canadian social and economic data such as births, deaths, and census information. CIHI is an independent not-for-profit organization working to compile and report quality, reliable and timely health information collected by hospitals and other sources.

Health Status

Health status measures are used to help provide a picture of the health of a population. These measures generally look at such things as life expectancy, how many babies were born dangerously small, infant mortality rates, even how well people say they feel. These measures help us to understand the overall health of a population. On most health status measures, Nova Scotia's results are similar to the national average; however in the areas of disability-free life expectancy and self-reported health there are some statistically significant differences.

Statistical significance

When you take a small sample of a large population and count the number of sick people, you need to determine whether the result can be applied to the population at large. Mathematical tests can show how "significant" or "reliable" observed differences really are.

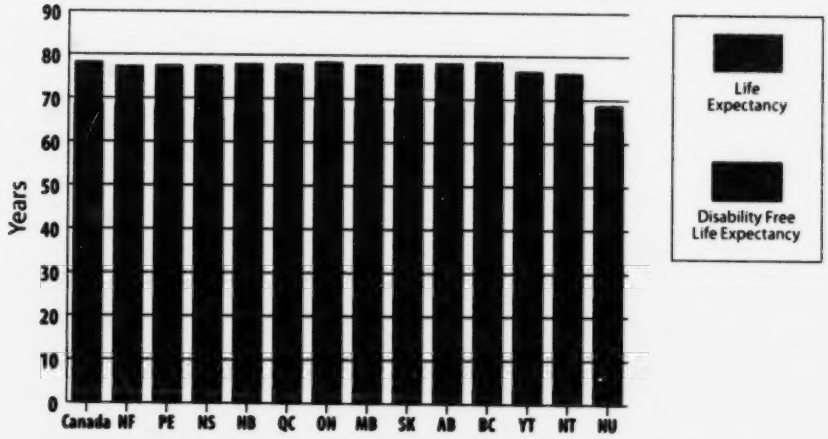
This is why you'll often see or hear the words "accurate to within 10 percent, 19 times out of 20" when reporters give the results of a poll, for example.

In this report, we will focus primarily on those comparisons that have been determined to be significant in this manner.

Life Expectancy and Disability-Free Life Expectancy

The average life expectancy at birth in Nova Scotia has increased from 74.2 in 1980 to 78.7 in 1999. While the average Nova Scotian will live just as long as other Canadians, he or she may experience short- or long-term disabilities up to three years sooner. The average Nova Scotian will live until 65.5 years free from disability, while the national average is 68.6 years.

Life Expectancy and Disability Free Life Expectancy at Birth, Canada and Provinces, 1996



Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division.

Disability-free life expectancy is the number of years an individual can be expected to live without moderate or severe disabilities.

If, on average, people are expected to live 75 years, but they tend to become restricted in their ability to perform daily tasks of living 20 years before death, then they have only 55 years of disability-free life expectancy.

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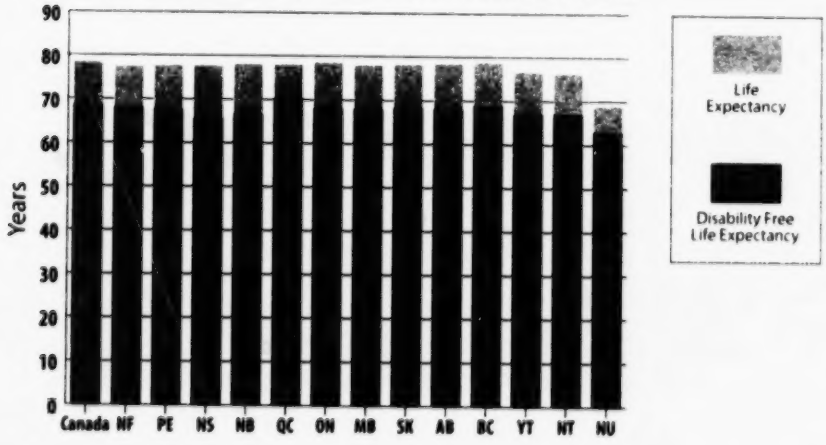

Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division

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10 Self-Reported Health

In a survey conducted by Statistics Canada, the numbers of people rating their health as very good or excellent has dropped substantially since 1998 for both Nova Scotia and Canada as a whole. In Nova Scotia, 67.3 per cent of those surveyed reported their health as very good to excellent in 1998, while 59.5 per cent reported the same health status in 2000. The Canadian population reported similar changes in their perception of their health status.

People 65 years of age and older were the least likely of all age groups in Nova Scotia likely to report very good or excellent health. Only 31.1 per cent of respondents in that age group reported very good or excellent health status, compared to 72.3 per cent of people between the ages of 20 and 34.

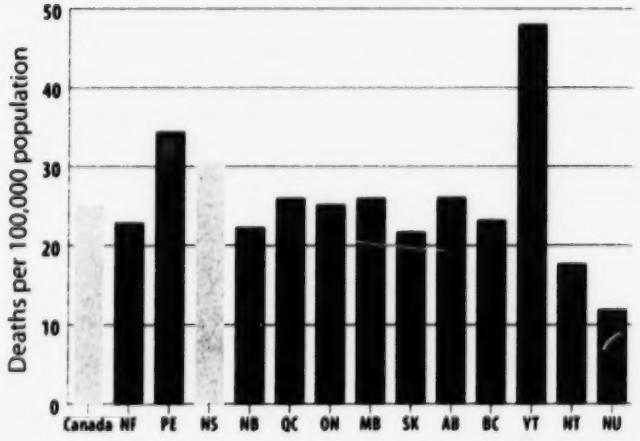
Health Outcomes

How common are illnesses and what effects do they have on our lives? Some diseases are more prevalent in Nova Scotia than in Canada as a whole, or the Nova Scotia rates have changed signficantly over the last 20 years. Measures of how common these illnesses are, how long people survive with these illnesses, and the effects of illness on quality of life and on life expectancy are reported.

Breast Cancer

The incidence of breast cancer in Nova Scotia is not substantially different from the national average. There were 104.9 cases per 100,000 women in the province in 1997, compared to the national average of 102 cases per 100,000 women.

Age Standardized Breast Cancer Mortality Rate Canada and Provinces, 1999



Source: Statistics Canada Vital Statistics and Demography Division 150

Age standardization

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Five-year survival rates describe the proportion of people who are still alive five years after a diagnosis of a particular illness. For women diagnosed with breast cancer in 1992, Nova Scotia's rate of survival was not substantially different from the national average, with 84 per cent of women diagnosed with breast cancer surviving five years as of 1997, compared to 82 per cent nationally.

Mortality

The proportion of the population who die due to a given illness.

Breast cancer mortality rates in Nova Scotia, however, are substantially higher than the national rates. In 1999, 30.7 per 100,000 Nova Scotia women died of breast cancer, compared to national average of 25.2 deaths per 100,000 women.

Prostate Cancer

The incidence of prostate cancer in Nova Scotia is substantially higher than the national average. There were 129.5 cases per 100,000 men in the province in 1997, compared to the national rate of 115 cases per 100,000 men.

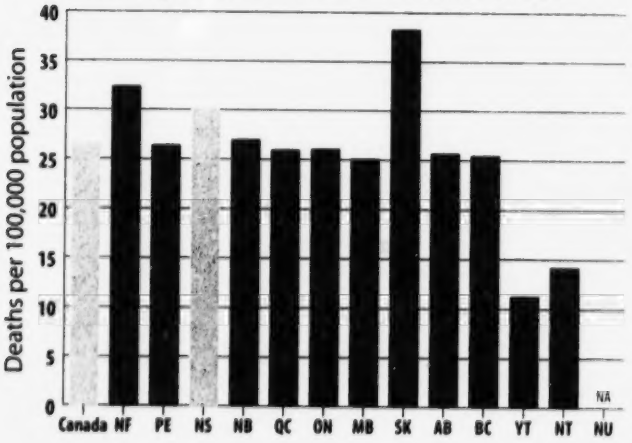
The five-year survival rate for prostate cancer in Nova Scotia was not substantially different from the national average in 1997. In Nova Scotia, 82 per cent of men diagnosed with prostate cancer in 1992 survived five years compared to 87 per cent nationally.

The following resources area available to provide more information about breast cancer prevention and detection:

Canadian Breast Cancer Foundation - Atlantic Chapter:
Suite 417, 5251 Duke Street,
Halifax NS B3J 1P3
Tel: 902-422-5520
Fax: 902-422-5523
Toll-free: 1-866-273-2223
http://www.cbcf.org/atlantic/

Nova Scotia Breast Screening Program:
Tower 1, Suite 105
7001 Mumford Road
Halifax NS B3L 4N9
Telephone: 902-473-3960
Toll-free: 1-800-565-0548
Fax: 902-473-3959

Age Standardized Prostate Cancer Mortality Rate, Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics and Demography Division, ISQ

Prostate cancer mortality rates, however, were higher in Nova Scotia compared to the national rates in 1999. There were 30.2 deaths per 100,000 men due to prostate cancer in Nova Scotia, compared to the national average of 26.7 deaths per 100,000 men.

10 Self-Reported Health

In a survey conducted by Statistics Canada, the numbers of people rating their health as very good or excellent has dropped substantially since 1998 for both Nova Scotia and Canada as a whole. In Nova Scotia, 67.3 per cent of those surveyed reported their health as very good to excellent in 1998, while 59.5 per cent reported the same health status in 2000. The Canadian population reported similar changes in their perception of their health status.

People 65 years of age and older were the least likely of all age groups in Nova Scotia likely to report very good or excellent health. Only 31.1 per cent of respondents in that age group reported very good or excellent health status, compared to 72.3 per cent of people between the ages of 20 and 34.

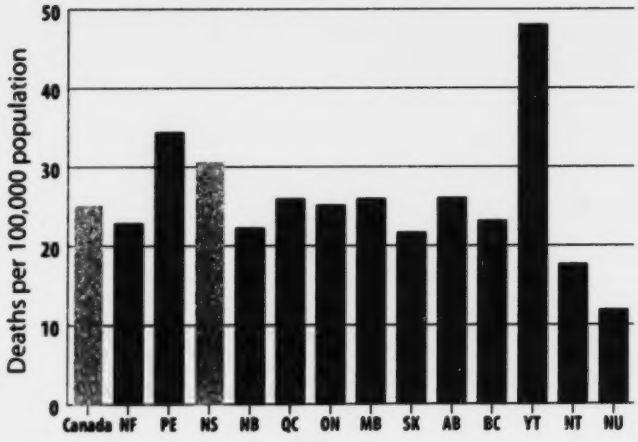
Health Outcomes

How common are illnesses and what effects do they have on our lives? Some diseases are more prevalent in Nova Scotia than in Canada as a whole, or the Nova Scotia rates have changed signficantly over the last 20 years. Measures of how common these illnesses are, how long people survive with these illnesses, and the effects of illness on quality of life and on life expectancy are reported.

Breast Cancer

The incidence of breast cancer in Nova Scotia is not substantially different from the national average. There were 104.9 cases per 100,000 women in the province in 1997, compared to the national average of 102 cases per 100,000 women.

Age Standardized Breast Cancer Mortality Rate Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics and Demography Division; ISQ.

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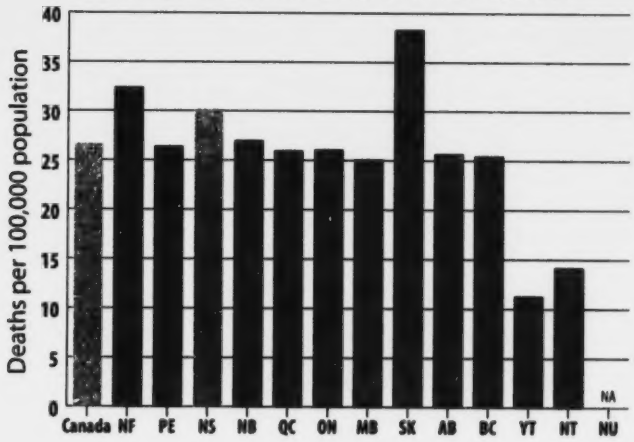


Source: Statistics Canada, Vital Statistics and Demography Division; ISQ.

Prostate cancer mortality rates, however, were higher in Nova Scotia compared to the national rates in 1999. There were 30.2 deaths per 100,000 men due to prostate cancer in Nova Scotia, compared to the national average of 26.7 deaths per 100,000 men.

12 Colorectal Cancer

The incidence of colorectal cancer in Nova Scotia is substantially higher than the national average. There were 55.4 cases per 100,000 people in the province in 1997, compared to the national average of 49.3 cases per 100,000 people.

Additional information on rates of cancer incidence and mortality can be found at Health Canada's Cancer Surveillance Online web site at: http://cythera.ic.gc.ca/dsol/cancer/index_e.html

More information about cancers of all types can be obtained by contacting Cancer Care Nova Scotia or visiting their website:

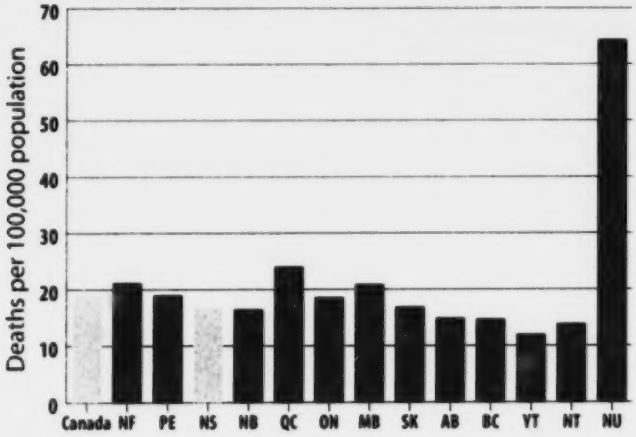
Cancer Care Nova Scotia
1278 Tower Road
5th Floor, Bethune Building
Halifax, Nova Scotia B3H 2Y9
Phone: 902-473-4645
Toll free: 1-866-599-2267
Fax: 902-473-4631
Email: info@ccns.nshealth.ca
http://www.cancercare.ns.ca/

The five-year survival rate for colorectal cancer in Nova Scotia was comparable to the national survival rate in 1997. About 56 per cent of Nova Scotians diagnosed with colorectal cancer in 1992 survived five years as of 1997, compared with 58 per cent nationally.

Nova Scotia's colorectal cancer mortality rate is lower than the national rate, with 16.7 deaths per 100,000 people in 1999 compared to 19.1 deaths per 100,000 people nationally. The rate of mortality due to colorectal cancer in Nova Scotia has dropped by almost half since 1980.

Better and earlier screening practices for colorectal cancers and more public awareness of the risk factors for the disease could explain the drop in colorectal cancer mortality rates.

Age Standardized Colorectal Cancer Mortality Rate Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics and Demography Division, ISQ

Colorectal cancer is the third most common cancer after breast and lung cancer. It is one of the most preventable cancers, and 80% of colorectal cancers are curable.

For further information contact:

Colorectal Cancer Association of Canada
180 Bloor Street West
Suite 904
Toronto, Ontario M5S 2V6
Phone 416-920-4333
Toll Free 1-888-318-944
Fax 416-920-3004
Email: info@ccac-accc.ca
http://www.ccac-accc.ca/

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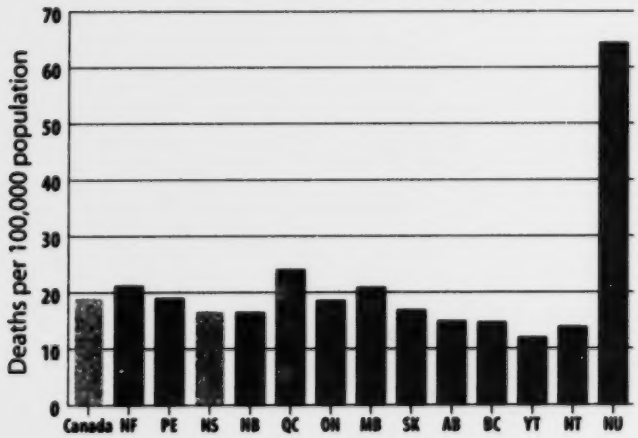

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180 Bloor Street West
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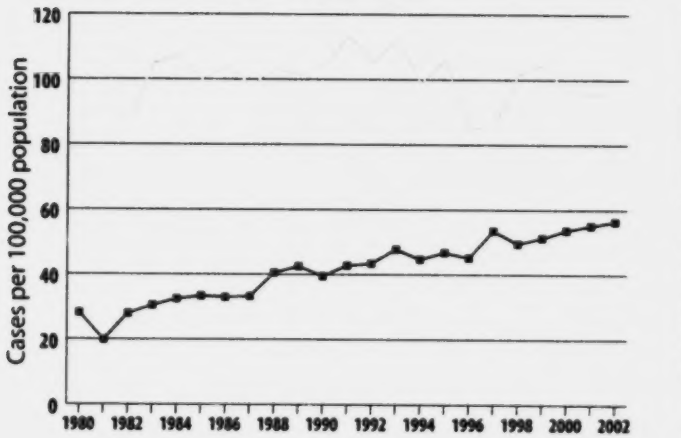
Phone 416-920-4333
Toll Free 1-888-318-944
Fax 416-920-3004
Email: info@ccac-accc.ca
http://www.ccac-accc.ca/

Lung Cancer

The incidence of lung cancer in Nova Scotia is substantially higher than the national average. There were 66.8 cases per 100,000 people in the province in 1997, compared to the national average of 57.9 cases per 100,000 people.

Age Standardized Lung Cancer Incidence Rate
Nova Scotia by Sex, 1980 - 2002*



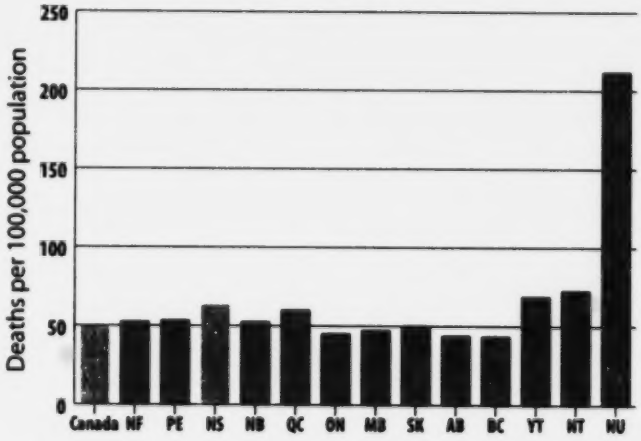
Source: Statistics Canada, Canadian Cancer Registry, and Demography Division.
* 1998-2002 data are projected estimates.

In Nova Scotia, the incidence of lung cancer in 1997 was substantially higher among men than among women, with 86.1 cases per 100,000 men compared to 53.5 cases per 100,000 women. The substantial increase in the incidence of lung cancer among women is of particular note. The gap between incidence rates for males and females has been decreasing during the past 20 years.

Nova Scotia's rate of survival at five years after diagnosis is not significantly different from the national average in 1997, with 14 per cent of those diagnosed with lung cancer surviving five years or more, compared to 15 per cent nationally.

Nova Scotia had one of the highest lung cancer mortality rates nationwide in 1999 at 63.4 deaths per 100,000 people, surpassed only by the territories. This is substantially higher than the national average of 50 deaths per 100,000 people. Nova Scotia males and females saw very different lung cancer mortality rates; males were twice as likely to die from lung cancer in Nova Scotia than females, with rates of 90.4 cases and 43.2 cases per 100,000 people respectively. The increased likelihood of males dying from lung cancer is consistent with the situation in other provinces and territories.

Age Standardized Lung Cancer Mortality Rate
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics and Demography Division; ISQ.

Cigarette smoking is the leading cause of lung cancer, accounting for at least 80 per cent of all new cases in women and 90 per cent of cases in men. Nova Scotia has traditionally high rates compared to the rest of Canada, with substantial costs to the healthcare system to treat tobacco related illness. Nova Scotia has seen only a modest decline in smoking rates in the last decade. Second-hand smoke is estimated to cause at least 300 deaths annually in Canada from lung cancer alone. Nova Scotia has implemented several stages of a comprehensive plan to reduce smoking in the province, including recent tobacco control legislation. See p 25 for more information on smoking rates in Nova Scotia.

Lung Association of Nova Scotia:
17 Alma Crescent
Halifax, Nova Scotia B3N 3E6
Email: info@ns.lung.ca
http://www.ns.lung.ca/

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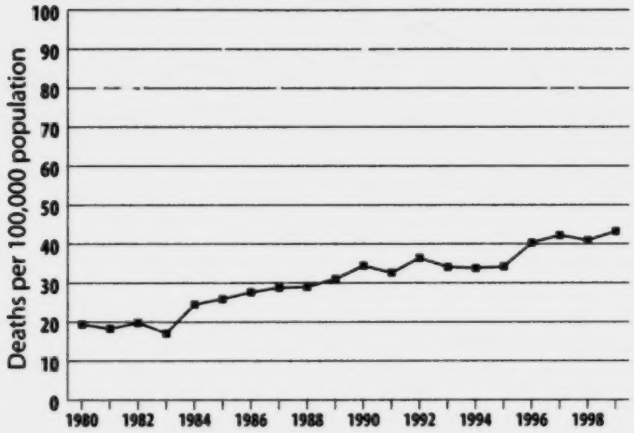


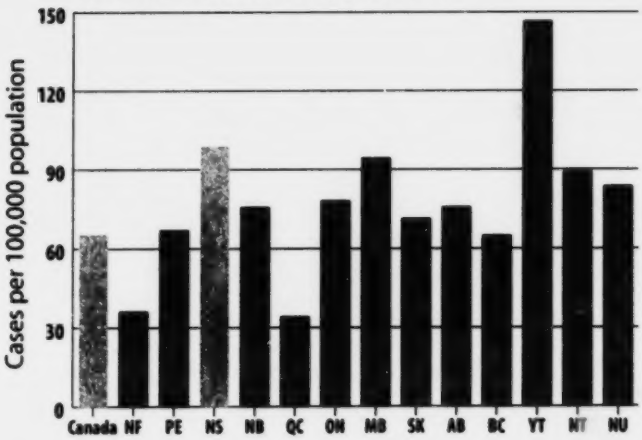
Source: Statistics Canada, Vital Statistics and Demography Division.

Improved Quality Of Life Through Hip And Knee Replacements

The intended outcome of most elective surgery is improved health-related quality of life. Total hip and total knee replacement surgeries are operations that result in a marked improvement in quality of life. Nova Scotia has the highest number of hip and knee replacements of any province in Canada. In 1999/2000, 99 of 100,000 Nova Scotians underwent knee replacement surgery, versus 66 of 100,000 Canadians. In Nova Scotia, 76.4 per 100,000 people had hips replaced, as compared to 59 per 100,000 Canadians.

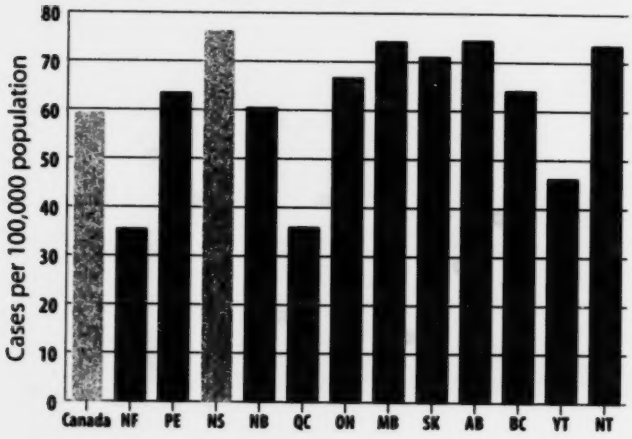
Rates of both knee and hip replacement were higher for females than for males in Nova Scotia. Female hip replacement rates were 22.2 cases higher than males in 2000, with rates of 85.5 females per 100,000 having hip replacements, compared to 63.3 males.

Age Standardized Total Knee Replacement Rate
Canada and Provinces, 1999/2000



Source: Hospital Morbidity Database, CIHI, Canada Census, Statistics Canada, ISQ

Age Standardized Total Hip Replacement Rate Canada and Provinces, 1999/2000



Source: Hospital Morbidity Database, CIHI, Canada Census, Statistics Canada; ISQ.

Potential Years of Life Lost

When people die prematurely from an illness, we can talk about how many years they could have lived had they not developed this illness. If, on average, people are expected to live 75 years, and someone dies at age 55, then 20 potential years of life have been lost.

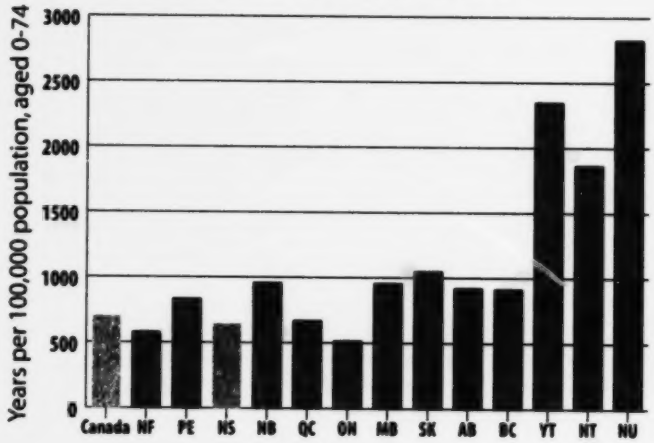
Unintentional Injuries

Unintentional injury statistics comprise the number of falls, drowning, motor vehicle collisions, poisonings, burns and accidental deaths. Many injuries are predictable and preventable.

In Nova Scotia, the potential years of life lost (PYLL) due to unintentional injuries are among the lowest in Canada, at 646 years per 100,000 Nova Scotians versus 707 per 100,000 Canadians. The rates in Nova Scotia and across the country have decreased significantly during the last ten years.

Despite the drop in PYLL, unintentional injuries represent a significant risk to our residents, as well as a substantial burden on the health care system. Each year, more than 400 Nova Scotians die due to unintentional injuries, while thousands are admitted to hospital. The annual cost to the province from injuries is estimated to be between $400 and $600 million.

Potential Years of Life Lost due to Unintentional Injuries, Canada and Provinces, 1999



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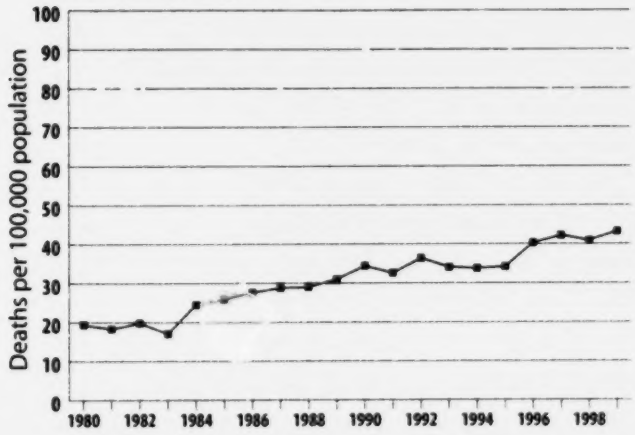

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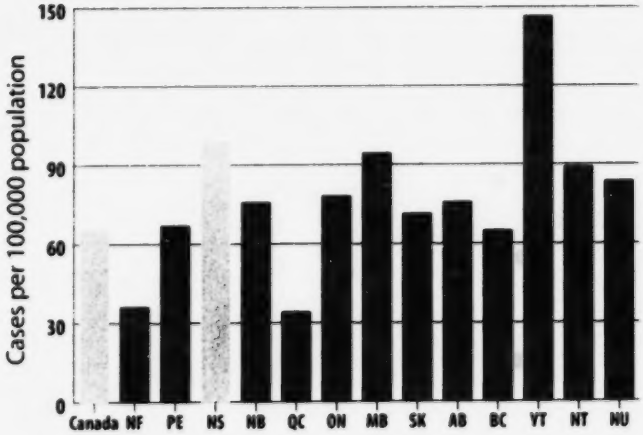

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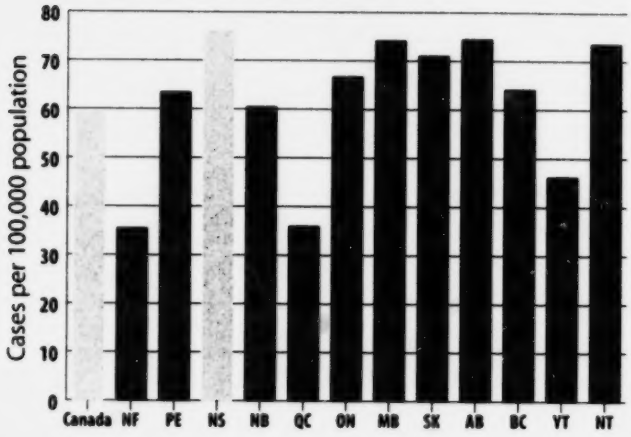

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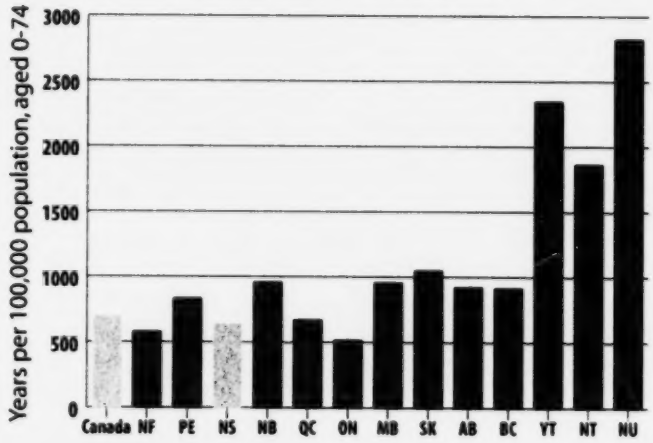

Source: Statistics Canada, Vital Statistics, Death Database and Demography Division, ISQ

Fifty years ago childhood diseases claimed eight times as many lives as unintentional injuries. Now, unintentional injuries kill more youth than every other cause combined. Seventy percent of teenage deaths are due to injury.[1] The rate of injury leading to death or hospitalization is higher for seniors than any other age group. The most common cause of injury for seniors is falls.[2] As the population of Nova Scotia and the rest of Canada ages, the numbers of injuries and hospitalizations due to falls are expected to increase.

For more information:

Comprehensive Report on Injuries in Nova Scotia: http://www.gov.ns.ca/health/reports.htm#Injury Report

Injury Prevention:
http://www.gov.ns.ca/health/injury_prevention.htm

Nova Scotia Child Safety and Injury
Prevention Program
IWK Grace Health Centre
5850 University Ave, PO Box 3070
Halifax, Nova Scotia B3J 3G9
Telephone: (902) 420-6492 Fax: (902) 420-6774
email: bbruce@iwkgrace.ns.ca

Incidence Rate of Vaccine Preventable Diseases

Invasive Meningococal Disease

Meningococcal infections are caused by a bacterium known as "meningococcus". Some people carry meningococci bacteria at the back of the throat or nose without any ill effects. However in rare instances, meningococci cause serious diseases, including meningitis - an infection of the lining of the brain - and meningococcemia, a widespread infection involving the blood and multiple organs.

The annual incidence of laboratory-confirmed cases of invasive meningococcal disease in Nova Scotia has decreased over the past decade. Following an outbreak in 1992, overall incidence in Nova Scotia has remained low and since 1998, has averaged about two cases per 100,000 annually in those less than 20 years of age. Incidence has been highest among young children, and is shown to decline with age.

Measles

Prior to the introduction of the measles vaccine in Canada, measles occurred in cycles characterized by increasing incidence every two to three years, with an estimated 300,000 to 400,000 cases occurring annually. Since the introduction of the vaccine, incidence has decreased sharply. In Nova Scotia, the last outbreak of disease occurred in 1986 when incidence rates peaked at 161 cases per 100,000 people. Over the last decade, rates have remained consistently low, at less than one case per 100,000 people.

Haemophilus influenzae b (invasive)

Haemophilus influenzae type b (Hib) is an important bacterial pathogen of early childhood. An estimated 2,000 cases of Hib occurred annually in Canada prior to the introduction of Hib conjugate vaccines in 1988.[1] Overall incidence has shown a greater than 99 per cent decline since that time with most cases now occurring in children too old to have had primary immunization. Incidence rates over the last decade for Nova Scotia children less than five years of age peaked at 4.88 five cases per 100,000 in 1992 and have remained below this rate since that time. There have been no reported cases of Hib in Nova Scotia in this or any age group since 1997.

For more information about vaccine preventable diseases and other public health issues please visit the Nova Scotia Department of Health Public Health website: http://www.gov.ns.ca/health/publichealth/default.htm

Prevalence Of Diabetes

About 5.9 percent of people in Nova Scotia have presented to a physician or hospital with this chronic illness. A greater proportion of males have diabetes than females, and the rate tends to increase greatly with age.

Prevalence estimates are based on data from the **National Diabetes Surveillance System (NDSS)**, which is currently in the early stages of implementation. This is interdisciplinary initiative committed to reducing the incidence and complications of diabetes through leadership in the development, implementation and national coordination of provincial, territorial, and Aboriginal diabetes surveillance systems.

The NDSS defines cases of diabetes based on hospital discharge and physician billing data. Differences between provinces and territories could be partially attributable to different data collection practices. Therefore comparisons between jurisdictions are not presented in this report.

Juvenile Diabetes Foundation Canada - Halifax
Suite 201 2651 Dutch Village Road
Halifax NS B3L 4B5
Phone: 902-453-1009 or 902-453-2720
Fax: 902-453-2528
Email: halifax@jdfc.ca
www.jdfc.ca

Canadian Diabetes Association - Nova Scotia Division, Halifax & District Branch
101 6080 Young St.
Halifax NS B3K 5L2
Phone: 902-453-4232
Fax: 902-453-4440
www.diabetes.ca/cda/brlist.htm

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For more information:

Comprehensive Report on Injuries in Nova Scotia: http://www.gov.ns.ca/health/reports.htm#Injury Report

Injury Prevention:
http://www.gov.ns.ca/health/injury_prevention.htm

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5850 University Ave, PO Box 3070
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Invasive Meningococal Disease

Meningococcal infections are caused by a bacterium known as "meningococcus". Some people carry meningococci bacteria at the back of the throat or nose without any ill effects. However in rare instances, meningococci cause serious diseases, including meningitis - an infection of the lining of the brain - and meningococcemia, a widespread infection involving the blood and multiple organs.

The annual incidence of laboratory-confirmed cases of invasive meningococcal disease in Nova Scotia has decreased over the past decade. Following an outbreak in 1992, overall incidence in Nova Scotia has remained low and since 1998, has averaged about two cases per 100,000 annually in those less than 20 years of age. Incidence has been highest among young children, and is shown to decline with age.

Measles

Prior to the introduction of the measles vaccine in Canada, measles occurred in cycles characterized by increasing incidence every two to three years, with an estimated 300,000 to 400,000 cases occurring annually. Since the introduction of the vaccine, incidence has decreased sharply. In Nova Scotia, the last outbreak of disease occurred in 1986 when incidence rates peaked at 161 cases per 100,000 people. Over the last decade, rates have remained consistently low, at less than one case per 100,000 people.

Haemophilus influenzae b (invasive)

Haemophilus influenzae type b (Hib) is an important bacterial pathogen of early childhood. An estimated 2,000 cases of Hib occurred annually in Canada prior to the introduction of Hib conjugate vaccines in 1988.[1] Overall incidence has shown a greater than 99 per cent decline since that time with most cases now occurring in children too oid to have had primary immunization. Incidence rates over the last decade for Nova Scotia children less than five years of age peaked at 4.88 five cases per 100,000 in 1992 and have remained below this rate since that time. There have been no reported cases of Hib in Nova Scotia in this or any age group since 1997.

For more information about vaccine preventable diseases and other public health issues please visit the Nova Scotia Department of Health Public Health website: http://www.gov.ns.ca/health/publichealth/default.htm

Prevalence Of Diabetes

About 5.9 percent of people in Nova Scotia have presented to a physician or hospital with this chronic illness. A greater proportion of males have diabetes than females, and the rate tends to increase greatly with age.

Prevalence estimates are based on data from the **National Diabetes Surveillance System (NDSS)**, which is currently in the early stages of implementation. This is interdisciplinary initiative committed to reducing the incidence and complications of diabetes through leadership in the development, implementation and national coordination of provincial, territorial, and Aboriginal diabetes surveillance systems.

The NDSS defines cases of diabetes based on hospital discharge and physician billing data. Differences between provinces and territories could be partially attributable to different data collection practices. Therefore comparisons between jurisdictions are not presented in this report.

Juvenile Diabetes Foundation Canada - Halifax
Suite 201 2651 Dutch Village Road
Halifax NS B3L 4B5
Phone: 902-453-1009 or 902-453-2720
Fax: 902-453-2528
Email: halifax@jdfc.ca
www.jdfc.ca

Canadian Diabetes Association - Nova Scotia Division, Halifax & District Branch
101 6080 Young St.
Halifax NS B3K 5L2
Phone: 902-453-4232
Fax: 902-453-4440
www.diabetes.ca/cda/brlist.htm

18 Quality of Service

Indicators in this category measure the appropriateness, effectiveness, accessibility, and acceptability of a limited number of health services. The indicators do not address all aspects of quality, primarily due to the limitations of existing data, but they are a first step.

Wait Times for Cardiac Surgery

Number of Months to Clear Wait List

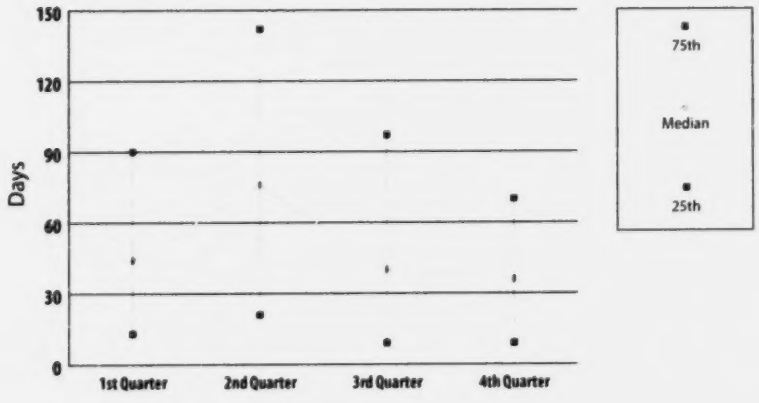
This indicator counts the numbers of patients waiting for elective Coronary Artery Bypass Graft (CABG) surgery at a given point in time, and asks how long it would take to operate on all of these patients given the current number of surgeries the hospital performs in a month. This assumes that no new referrals are added to the wait list from that point in time forward. As such, it is an artificial statistic. However, it is one that is useful in illustrating the amount of overflow in the system.

The average number of months it would have taken to clear Nova Scotia's wait list for elective CABGs uncomplicated by other simultaneous surgical procedures was 3.3 months at the end of June 2001. The potential amount of time it would take to clear the wait list dropped to 2.5 months by the end of September, and to 1.8 months by the end of December. By the end of March 2002 the expected time to clear the wait list if no new cases were added was 1.1 months.

Median Wait Time

The median wait time for patients awaiting CABG surgery in Nova Scotia was 43 days in 2001-2002, with the longest wait of 76 days occurring throughout the summer months (July to September) and the shortest wait of 36 days occurring in the winter months (January to March).

Median Wait Times for Coronary Artery Bypass Graft
Nova Scotia, 2001/2002



Source: Cardiovascular Surgery Division, QEII Health Sciences Centre

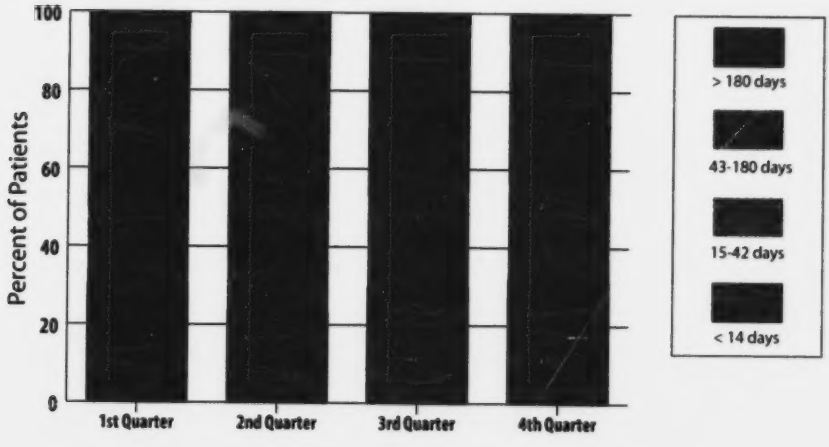
These statistics do not take into account the conference system and four actively managed queues in place at the Queen Elizabeth II Health Sciences Centre (QEII), where patients are assigned an urgency level based on the severity of their symptoms and anatomy.

All patients who are in immediate danger of death or disability, and who can be operated on safely, are treated immediately or within 24 hours.

Distribution of Wait Times

Throughout the year, 23 to 32 per cent of patients receiving CABGs waited 14 days or fewer for their surgery. Thirteen to 25 per cent waited 15 to 42 days, and 36 to 53 per cent waited 34 to 180 days. Finally, four to 11 per cent waited longer than 180 for elective CABGs.

Distribution of Wait Times for Coronary Artery Bypass Graft Nova Scotia, 2001/2002



Source: Cardiovascular Surgery Division, QE II Health Sciences Centre.

Maritime Heart Centre
Halifax Infirmary,
Queen Elizabeth II
Health Sciences Centre
Suite 2269
1796 Summer St.
Halifax NS B3H 3A7
Phone (902) 473 3808 or
(902) 473 7597
Fax (902) 473 4448
http://www.medicine.
dal.ca/mhc/

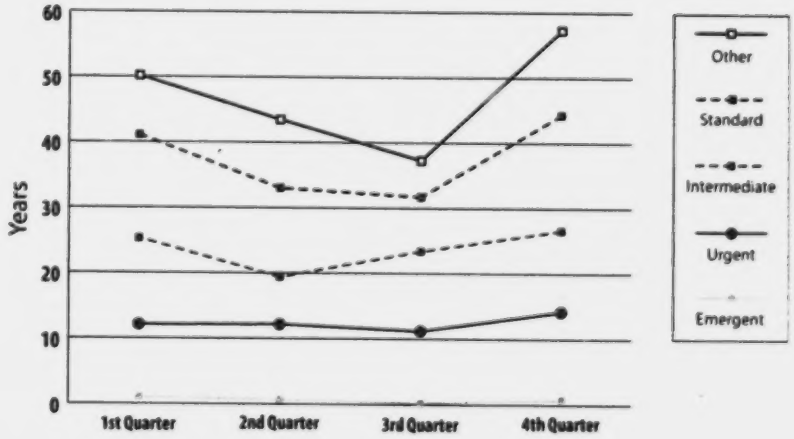
Improving
Cardiac Outcomes
in Nova Scotia
P.O. Box 9000
Halifax NS B3K 6A3
Phone (902) 472 7811
http://www.icons.ns.ca/

Wait Times for Radiation Therapy

Cancer patients in Nova Scotia who are treated using radiation receive therapy at the QEII or Cape Breton Health Care Complex (CBHCC). Waiting times for radiation therapy at both complexes are reported.

During fiscal 2001, the average wait for patients requiring emergency service was generally less than one day. Urgent cases were treated within an average of about 12 days at the QEII, and about seven days at the CBHCC. Other, less urgent, cases generally waited longer at both sites.

Average Wait Time for Radiation Therapy, QEII Health Sciences Centre, Years



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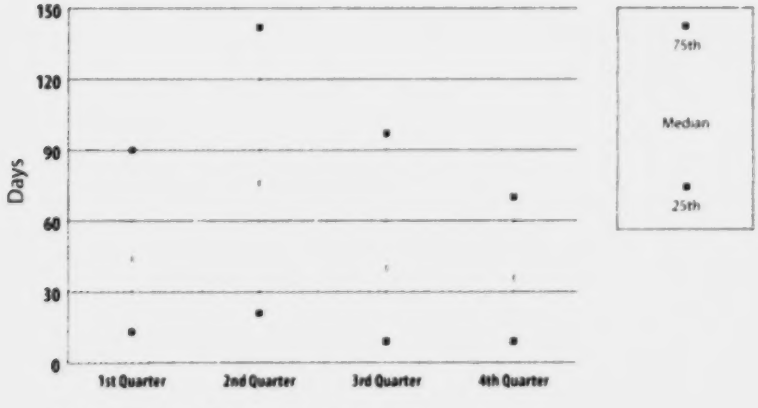

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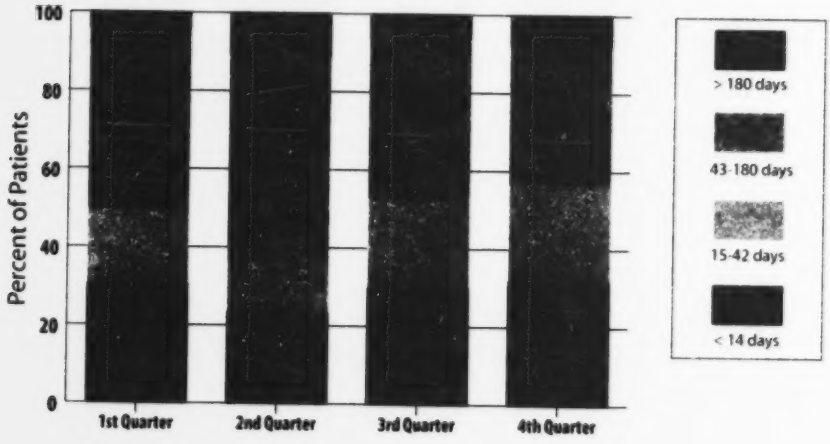

Source: Cardiovascular Surgery Division, QE II Health Sciences Centre

Maritime Heart Centre
Halifax Infirmary,
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Suite 2269
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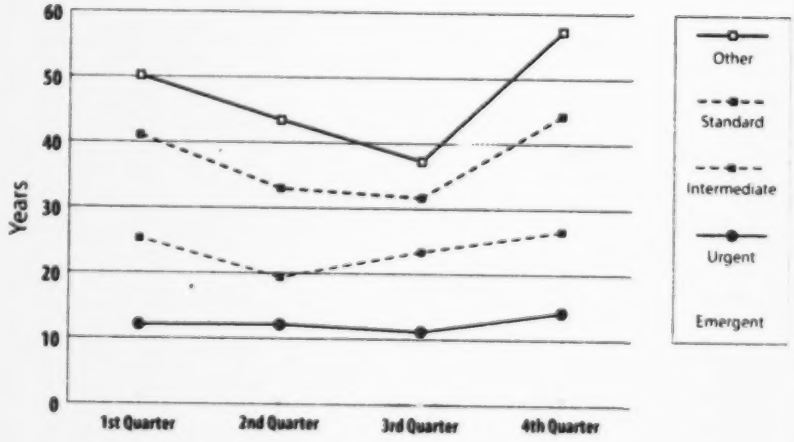
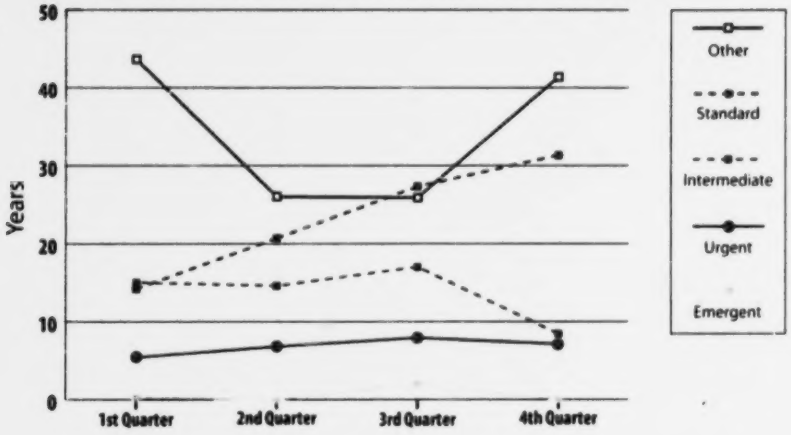


Source: Radiation Therapy Department, QEII Health Sciences Centre

Wait Times for Radiation Therapy by Patient Priority
Cape Breton District Health Authority, 2000/2001



Source: Radiation Therapy Department, QEII Health Sciences Centre

Patient Satisfaction

A recent Statistics Canada survey asked people to rate their satisfaction with any health care services they received in the past year. A high proportion of Nova Scotians - 80 percent - were satisfied with hospital services received. A similar high rating was found for Canada as a whole. Even more Nova Scotians and Canadians – 91 percent – were satisfied with services provided by family doctors or other physicians.

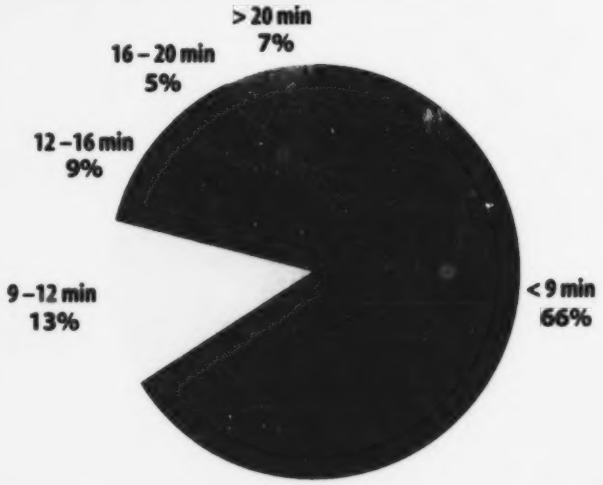
Nova Scotians were significantly more satisfied than other Canadians with the community-based health care services they had received. These services include home-based therapy, nursing and personal care or walk-in clinics.

Access to 24/7 First Contact Health Services

Nova Scotia is reporting on response time for ground ambulance calls as an indication of accessibility to emergency services. Nova Scotia is recognized as having the best ambulance service in Canada, and the majority of emergency calls – 66 percent – result in an ambulance arriving at the scene within nine minutes or less.

Nova Scotia's Department of Health has defined a target of 68 per cent (by 2004-2005) for response times of nine minutes or less from ambulance dispatch to arrival at the emergency scene.

Ground Ambulance Response Times for Emergency Calls, Nova Scotia, 2000/2001



Source: Emergency Medical Services.

There is more to first contact health services and primary care than ambulance service. One of the Nova Scotia Department of Health's core business areas is Population Health and Primary Care. Services include health education, promotion, prevention, rehabilitation, support and treatment for illness and injury. A community-based primary health care system is a strategic direction for the Nova Scotia Department of Health. Four Strengthening Primary Care Initiative projects are completing their initial three-year cycle.

Work is proceeding at the national level to create a comprehensive framework for primary health indicators. Nova Scotia will work with its national partners to develop this framework and reliable indicators for future reporting.

For more information about **Primary Health Care in Nova Scotia**, please visit our website:

Primary Health Care Renewal in Nova Scotia
http://www.gov.ns.ca/health/phcrenewal/default.htm

Home and Community Care Services

In recent years, governments have supported programs to deliver some health services to people in their homes as an alternative to admitting people to hospitals or nursing homes. As home care programs continue to expand, it is expected that these services will be provided to increasing numbers of people. Each year during the period 1996 to 2001, just over one percent of Nova Scotians were admitted for home care services.

The province is working to ensure that Nova Scotians have appropriate access to home care services. More data are required before a formal target can be set. Several projects that could have significant impacts on our long-term health outcomes or health services needs are in the planning or pilot project stages. For example, the Single Entry Access (SEA) system will provide a coordinated single entry point to Home Care or Long Term Care services. The SEA project goals include improving access to a range of continuing care services, including home care, long term care and adult protection.

Continuing Care serves people who need ongoing care outside of hospital, either on a long-term or short-term basis. It is a branch of the Department of Health providing access to home care services, long-term care such as a nursing home or residential care facility, and protection for vulnerable adults.

The one number to call toll-free to connect with Continuing Care services is:

1-800-225-7225

This number operates every day, including weekends, from 8:30 a.m. to 4:30 p.m. A person at that number will help you identify your needs for care and the services that would best meet them.

For more information visit the Nova Scotia Department of Health's Continuing Care website or call the above number for our fact sheets:
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Tuberculosis

The incidence of new "active" and "relapsed" tuberculosis cases in Nova Scotia has declined over the last decade. It peaked at just fewer than two cases per 100,000 population in 1993, and reached a low of 0.3 cases per 100,000 population in 2000.

HIV

The number of positive HIV test reports describes those individuals who have been tested and diagnosed with an HIV infection. It is not representative of the total number of persons living with HIV (i.e., prevalence) or the number of newly infected individuals (i.e., incidence).

HIV testing began in Canada in November 1985. Between 1985 and 2001, the number of positive HIV test reports for males exceeded those for females by approximately six to one.[1] In Nova Scotia and PEI, the annual rate of positive HIV test reports has shown a constant decrease, from about four cases per 100,000 population in 1996 to one case per 100,000 in 2001.

Information about Sexually Transmitted Diseases:
http://www.gov.ns.ca/health/publichealth/content/non_vac.htm

Information on HIV Testing and Reporting in Nova Scotia:
http://www.gov.ns.ca/health/publichealth/content/pubs/01-11840.pdf

AIDS Coalition of Nova Scotia:
Suite 321, 1657 Barrington Street
Halifax NS B3J 2A1
Tel: (902) 429-7922 or (902) 425-4882
Fax: (902) 422 5200
http://www.acns.ns.ca/

Verotoxogenic E. Coli

Verotoxogenic E.coli is most often acquired through consumption of undercooked, contaminated ground beef and has become an emerging cause of food- and water-borne illness.[1] The annual rate of new laboratory-confirmed cases of Verotoxogenic E. Coli in Nova Scotia has remained relatively constant at around four cases per 100,000 people, save for a decrease in 1997 and an outbreak in 1998.

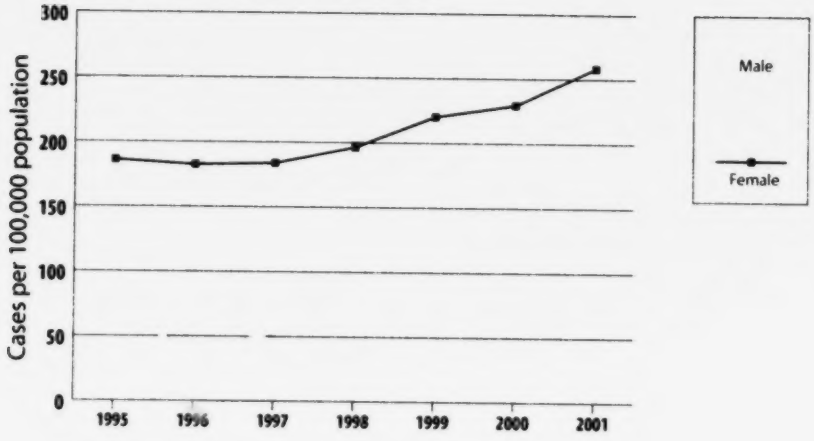
Genital Chlamydia

Incidence rates for genital chlamydia in females in Nova Scotia increased over the period 1997 to 2001, and far exceeded the rates in males in both the 15-19 and 20-24 year age groups.

STD Helpline - Nova Scotia
Phone: (902) 473-2272

One factor thought to be responsible for the apparent increase, particularly for males, is the introduction of nucleic acid amplification techniques (NAAT) for testing[1] – in other words, better detection of infections.

Chlamydia Incidence Rate
Nova Scotia by Sex, 1995 - 2001

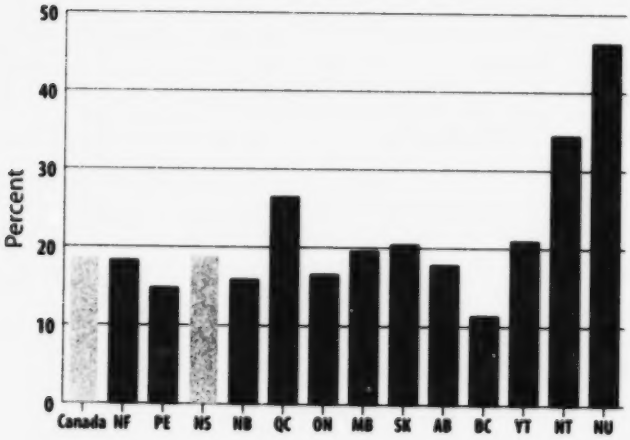


Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health

Smoking and Exposure to Environmental Tobacco Smoke

About 19 per cent of teenagers in Nova Scotia were smoking in 2000 according to a recent Statistics Canada survey. This rate is on par with the rates for teenagers across Canada.

Percent Current Daily and Occasional Teenaged Smokers, Age 12 - 19, Canada and Provinces, 2000



Source: Statistics Canada, Canadian Community Health Survey, ISQ

According to the Canadian Lung Association, **tobacco use is considered the single most preventable cause of death** among Canadians, with smokers having a risk of premature death approximately double that of non-smokers, largely as a result of cancer and ischemic heart disease. Secondhand smoke is associated with the development of heart disease and cancer in non-smokers.

For years, men smoked at much higher rates than women. Over the last decades the rate of smoking among men has fallen at a much faster rate than the rate of smoking among women. Canada has the 7th highest rate of smoking among women in the world, according to the World Health Organization.

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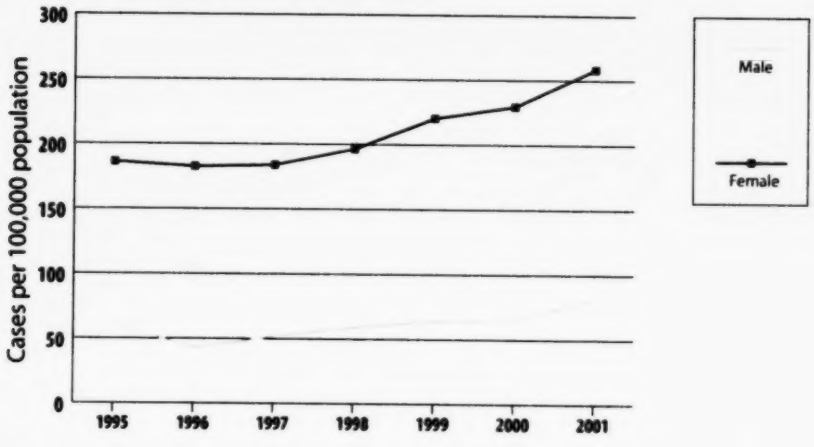

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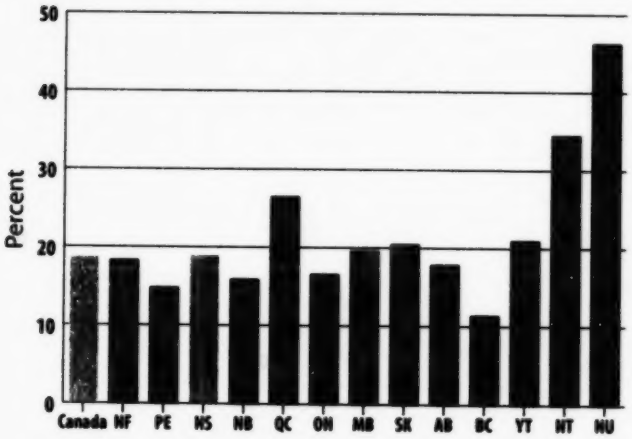

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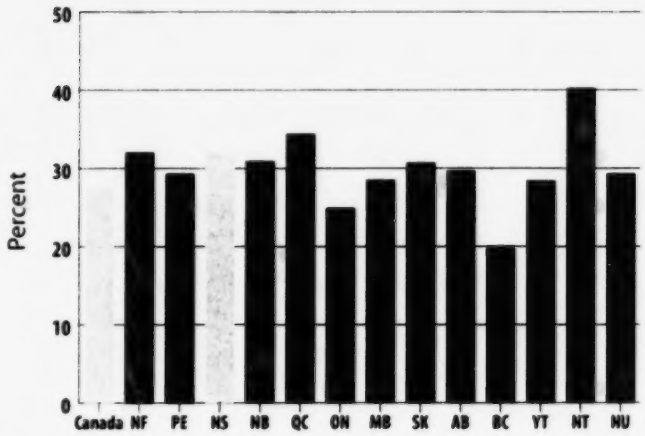
For years, men smoked at much higher rates than women. Over the last decades the rate of smoking among men has fallen at a much faster rate than the rate of smoking among women. Canada has the 7th highest rate of smoking among women in the world, according to the World Health Organization.

However, the rate of smoking among peoples aged 35 to 44 age group in Nova Scotia is 6.7 per cent higher than the national rate, at 38.3 per cent compared to 31.6. The proportion of people who smoke decreases with age in Nova Scotia and in Canada as a whole.

According to the same survey, 32 per cent of the Nova Scotian population was routinely exposed to second hand smoke in 2000, one of the highest rates across the country, surpassed only by Quebec and the North West Territories. Just over 50 per cent of Nova Scotians between the ages of 15 and 24 were exposed to second hand smoke.

Nova Scotia's province-wide Comprehensive Tobacco Strategy and the newly introduced anti-smoking legislation aim to decrease the second-hand tobacco smoke exposure rate to the Canadian average by 2004/2005.

Exposure to Environmental Tobacco Smoke in the Last Month, Age 12+, Canada and Provinces, 2000



Source: Statistics Canada: Canadian Community Health Survey

Department of Health - Tobacco Control Unit

The Nova Scotia Department of Health established the Tobacco Control Unit (TCU) in January 1995, in response to tobacco being the number one cause of preventable death and disability among Nova Scotians.

The TCU is responsible for development, implementation and evaluation of a comprehensive tobacco control strategy.

Tobacco Control Unit
NS Department of Health
Joseph Howe Building
1690 Hollis Street
PO Box 488
Halifax NS
B3J 2R8
Tel: 902-424-5187
Fax: 902-424-0663
http://www.gov.ns.ca/health/tcu/default.htm

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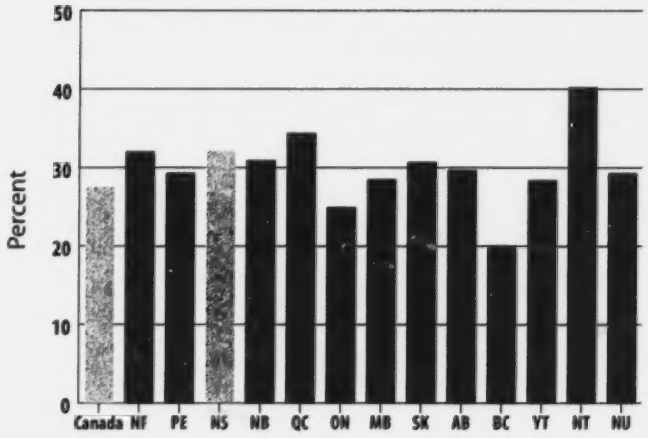


Source: Statistics Canada, Canadian Community Health Survey.

Department of Health - Tobacco Control Unit

The Nova Scotia Department of Health established the Tobacco Control Unit (TCU) in January 1995, in response to tobacco being the number one cause of preventable death and disability among Nova Scotians.

The TCU is responsible for development, implementation and evaluation of a comprehensive tobacco control strategy.

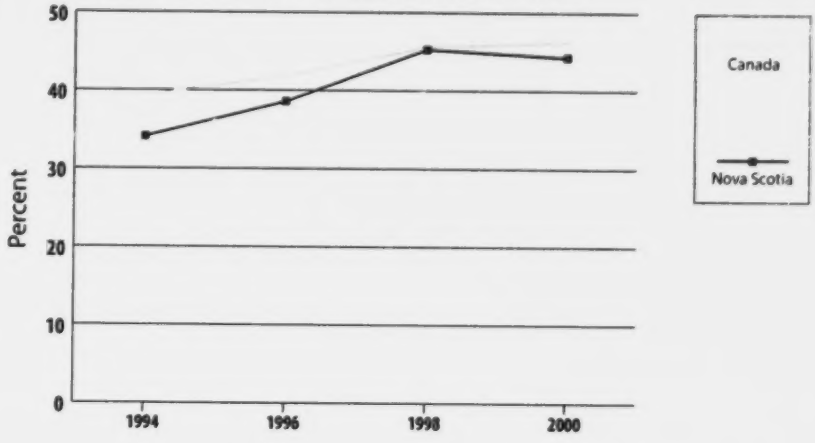
Tobacco Control Unit
NS Department of Health
Joseph Howe Building
1690 Hollis Street
PO Box 488
Halifax NS
B3J 2R8
Tel: 902-424-5187
Fax: 902-424-0663
http://www.gov.ns.ca/health/tcu/default.htm

Physical Activity

Maintaining regular physical activity is associated with many benefits including improved cardiovascular and mental health. The percentage of Nova Scotians who report that they are moderately active or fully physically active increased from 34.1 per cent in 1994 to 43 per cent in 2000, and is on par with the national average

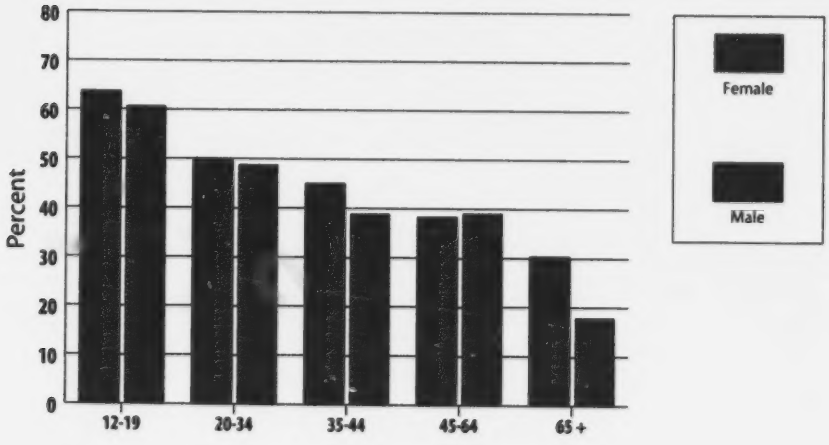
While women and men in Nova Scotia have relatively similar physical activity rates to one another, women are significantly less active after 65 years of age than men. Only 18 per cent of Nova Scotian women 65 years and over are physically active, compared to just over 30 per cent of men in the same age group. Over 30 per cent of Nova Scotian youth ages 12 - 19 are physically inactive.

Percent Physically and Moderately Active, Age 12+Nova Scotia vs Canada, 1994 - 2000



Source: Statistics Canada, Canadian Community Health Survey, National Population Health Survey, 1994/96/98; ISQ.

Percent Physically and Moderately Active, Age 12+, Nova Scotia by Sex and Age Groups, 2000



Source: Statistics Canada, Canadian Community Health Survey.

26 Through joint initiatives such as the Provincial Physical Activity Strategy for Children and Youth (PACY), the Chronic Disease-prevention Strategy, and curriculum revisions to increase physical activity in schools the province hopes to continue increase the proportion of the population that is physically active

Information about PACY can be obtained from:

Sports and Recreation Commission
P.O. Box 864
2nd Floor, 5516 Spring Garden Road
Halifax, Nova Scotia, B3J 2V2
Phone: (902) 424-7512 Fax: (902) 424-0520
http://www.gov.ns.ca/src
http://www.gov.ns.ca/src/initiatives_pacy.htm

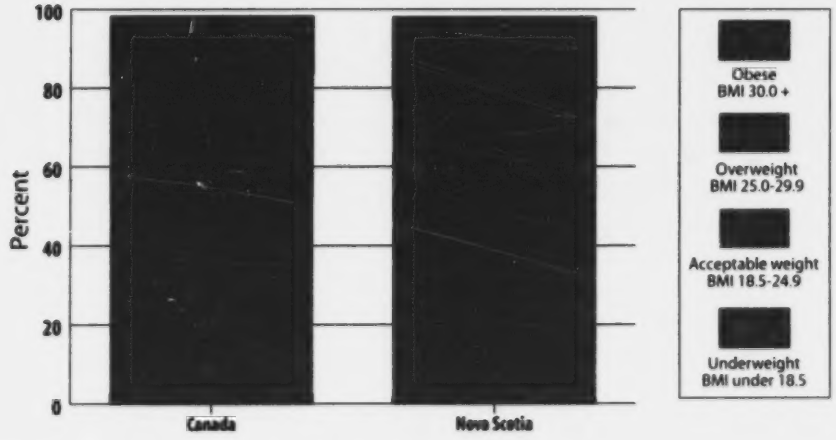
Canada's Physical Activity Guides, including special guides for Children and Older Adults
http://www.hc-sc.gc.ca/hppb/paguide/

Body Mass Index

Healthy body weight is associated with fewer health problems. People who are overweight are more likely to have diseases such as high blood pressure, diabetes, gall bladder disease, and complications of pregnancy. Being overweight or obese is often the result of multiple unhealthy lifestyle behaviours such as poor eating habits, inadequate physical activity, and personal choices. As more people make healthy lifestyle choices, more will have healthy weights.

One way to assess body weight is by measuring the Body Mass Index. This is a common method for calculating if an individual's weight is in a healthy range based on their height. People with a body mass index rated over 30 are considered obese. In Nova Scotia, obese people make up about 21 per cent of the population, whereas in Canada as a whole they make up just 15 percent of the population. Most obese Nova Scotians were 45 years of age and older. An additional 34.2 per cent Nova Scotians have a body mass index of 25 to 29, which means they are carrying some excess weight. Therefore a total of 55 per cent of the Nova Scotian population is overweight or obese.

Body Mass Index, Both Sexes
Nova Scotia vs Canada, 2000



Source: Statistics Canada, Canadian Community Health Survey, ISQ

With partners at multiple levels and in multiple sectors, the province aims to decrease the proportion of Nova Scotians whose body weight increases their risk for health problems to 52 per cent by 2004-2005. The Department of Health has continued to develop and strengthen strategic linkages in the community and other sectors. In addition, the Department will collaborate with the Nova Scotia Alliance for Healthy Eating and local public health services to promote behaviours, capacity and polices that support and protect healthy eating and physical activity.

Along with increasing physical activity, as described above, it is important to eat a healthy diet.

The Nova Scotia Department of Health's Public Health site on Nutrition and Healthy Eating:
http://www.gov.ns.ca/health/publichealth/content/nutrition.htm

Health Canada's Nutrition website:
http://www.hc-sc.gc.ca/hppb/nutrition/

The Canada Food Guide:
http://www.hc-sc.gc.ca/hppb/nutrition/pube/foodguid/index.html

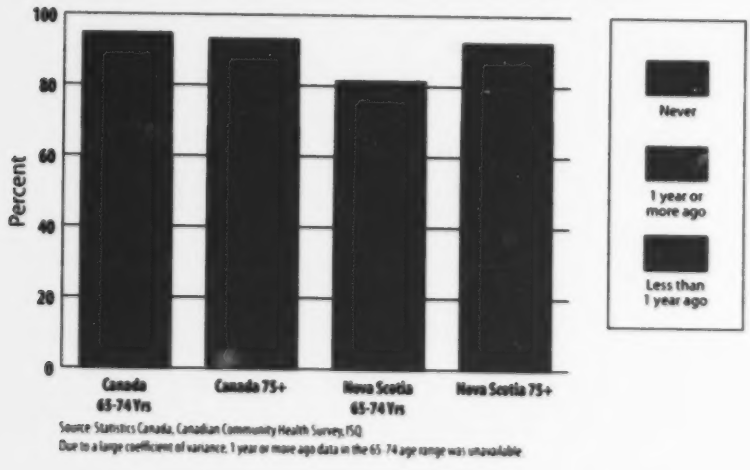
Flu Immunization

Immunization against influenza is an important public health intervention, especially for those at higher risk such as the elderly.

During 2000-2001, 66 per cent of the Nova Scotian population over 65 years of age reported having had a flu shot in the last year, as compared with 63 per cent of all Canadians 65 or older. This shows an improvement since 1996-1997 when 58.3 per cent of Nova Scotians and 47.9 per cent of Canadians in general reported receiving flu shots. Overall, Nova Scotia compares very favourably with other provinces. Decreases in the hospitalization of people with influenza and pneumonia may reflect the success of the immunization program and aggressive public awareness campaigns.

The province aims to increase the percentage of the population aged 65 years and over who receive influenza vaccinations to 80 per cent by 2004-2005.

Percent Reporting Immunization for Influenza, Ages 65-74 and 75+, Nova Scotia vs Canada, 2000



Source: Statistics Canada, Canadian Community Health Survey, 1SQ
Due to a large coefficient of variance, 1 year or more ago data in the 65-74 age range was unavailable

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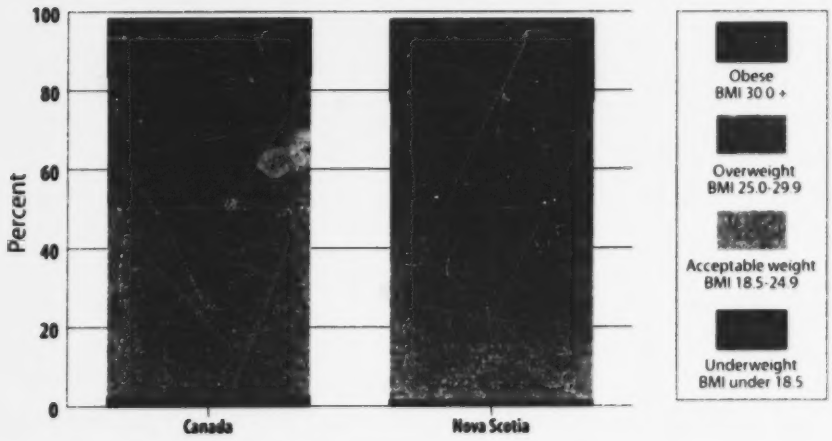

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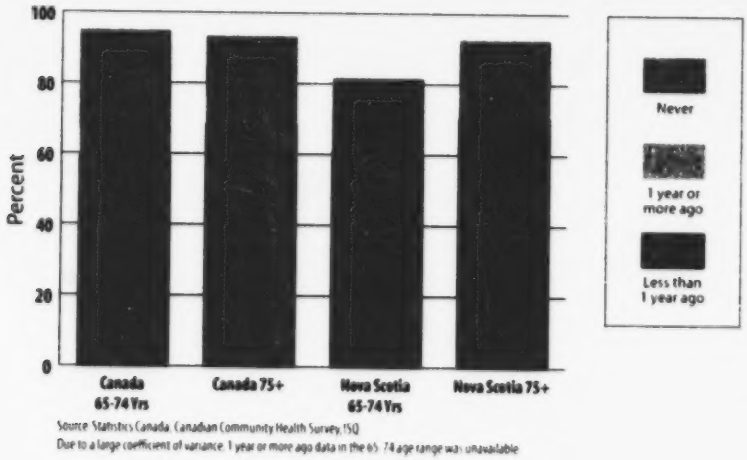

Source: Statistics Canada, Canadian Community Health Survey, 150
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28 Conclusions

The results for 46 of the 64 indicators reported by Nova Scotia in the companion Technical Report were on par with Canada's results. This is overwhelming evidence that the health care system in Nova Scotia is operating as well as, and sometimes better than, the systems in the other provinces and territories.

For several of the indicators highlighted in this Analysis and Discussion document, Nova Scotia's performance improved over time or exceeded Canada's performance. For about the same number of indicators, Nova Scotia's performance decreased over time or fell short of the Canadian average. Provincial Programs such as Cancer Care Nova Scotia and strategies such as the Comprehensive Tobacco Strategy and the Provincial Physical Activity Strategy f or Children and Youth are in place to help improve our results in all of these areas.

For a few of the indicators, comparable data are not yet available across the country. For still others, no data are available at all. Nova Scotia and all of the other jurisdictions are working to improve the availability and comparability of the data for the next report.

Nova Scotia is committed to improving health programs and services and the health of its residents. Improving the ability to collect, analyze and use health information will help us to act on that commitment. The government believes health decisions must be based on good evidence. Having appropriate health information allows us to understand what is happening in our health care system. This helps us to properly manage and improve the programs and services needed to provide better patient care. This report reminds us of the importance of health information systems to collect the data essential to making decisions based on evidence.

Health system performance is tracked through several systems, both provincially and by the District Health Authorities (DHAs). The province and the DHAs regularly use data published by CIHI and Statistics Canada according to the CIHI performance indicators framework for decision-making. The Nova Scotia Department of Health Accountability Report uses many of these same measures and other information specific to issues of importance to Nova Scotians. A provincial initiative for 2003 will be the development of a provincial indicator-reporting project that will be founded on the CIHI and Organisation For Economic Co-Operation And Development (OECD) frameworks.

The Management Information System (MIS) has been implemented throughout the hospital system and provides comparable data on the efficiency and costs of services provided to patients as well as on the staff hours required to provide health care services. MIS compares hospitals within the province and across the country.

Other province-wide information will be available through the Nova Scotia Hospital Information System (NShIS) to support resource allocation on an inter-facility basis. NShIS will expand the range and quality of clinical and statistical information available. Clinicians are directly involved in the development of the system to insure that it can provide good information on the performance of the health care system – including outcomes of care. This will be Canada's first province-wide Hospital Information System.

Emergency Health Services collects and analyzes information to improve pre-hospital emergency medical care. Provincial Programs such as Cancer Care Nova Scotia, the Diabetes Care Program of Nova Scotia, ICONS, and Reproductive Care Nova Scotia have sophisticated databases and report extensively on patient outcomes, waiting times for service, improvements in patient status following treatment. The Provincial Programs have worked with care providers throughout the province to develop standards for the provision of service, establish benchmarks, and report on performance against those benchmarks to support continuing education initiatives. Our goal is to expand on these initiatives in the future.

Ministers of Health are committed to the development of new and better comparable indicators of health system performance. More work has to be done in the areas of access to care and the outcomes of health care services. It is also important that each province and territory work to ensure the quality of each jurisdiction's data in terms of accuracy, completeness and appropriateness.

The report "Reporting to Nova Scotians on Comparable Health and Health System Indicators" will be repeated every two years. All provinces and territories and the federal government will continue to work to improve the next report. The Ministers have also agreed to consult with the public on the indicators used in their reports. They will seek your advice on which indicators are most important to you to see in future reports. This report is a very good first start and we look forward to a second, more thorough report in 2004.

It is recognized that there are shortcomings in the types of information Canadian and other jurisdictions are able to report on about health care. Of greatest interest are measures of **access to care**, and of the **outcomes of care** -

- **Are health care services and professionals available to all people who have health care concerns?**
- **How long do people wait to see a professional to diagnose problems and to treat them?**
- **How effective are treatments in improving patients' levels of comfort and function or mobility?**

To try to address these needs, we are expanding the range of information collected across the health care delivery system, including information on patient outcomes and functional status. Clinical leaders have been on the forefront of these initiatives.

Small- and large-scale projects are underway in Nova Scotia and around the country to try to improve the information available on these topics. The QEII has in recent years begun to formally follow up with patients in selected services at six-month intervals to determine whether surgeries are successful in improving patients' quality of life. National and provincial initiatives are under way to improve the collection of information on how long patients wait for surgeries.

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References

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   Health Canada
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6. 1998/1999 Canadian Sexually Transmitted Diseases (STD) Surveillance Report. Canada Communicable Disease Report. Supplement. Division of STD Prevention and Control. Bureau of HIV/AIDS, STD and TB. Centre for Infectious Disease Prevention. Health Canada. October 2000. Volume 26S6. p.1-2.

Reporting to **Nova Scotians**

on Comparable Health and Health System Indicators

Technical Report

September 30, 2002

This report is consistent with the Federal/Provincial/Territorial agreement by the Ministers of Health to report on comparable health indicators.

NOVA SCOTIA
Department of Health

http://www.gov.ns.ca/health

Letter from the Minister

Two years ago, health ministers from across Canada were directed by our premiers to address the need for comparable health information in Canada. The premiers agreed that cooperation between jurisdictions was essential to reach their goal. A nationwide group led by Alberta developed 14 indicator areas to be used in performance reporting by each government. Within each of these areas, a number of specific indicators were identified for this report.

While comparisons between jurisdictions are a way to achieve some accountability, problems arise when trying to compare health information collected in different ways. This report attempts to address these problems by presenting comparable information from a number of standard indicators that reflect the performance of the health care system in each jurisdiction.

Nova Scotians expect that a health report like this will help make government more accountable. Thus, this information will be useful not only for health care planners and providers, but also for the public, which deserves to know how its province or territory compares to the rest of Canada. Not surprisingly, in the results for all of the areas measured, there are far more similarities than differences between Nova Scotia and the rest of Canada.

This report is a reminder of the necessity for health information systems. It is extremely important that we are able to collect and utilize health care data to support the management of the health care system. It has been a priority for us in Nova Scotia to invest in a range of information management and information technology initiatives, not only because it plays a vital role in the management of our health care system, but also because it helps us deliver better health care to Nova Scotians. If we lack the infrastructure to collect data and to understand what is happening in our health care system, then we miss an opportunity to improve programs and services and to provide better patient care.

This report is a first step, not just for us, but for the entire country. A great deal has been accomplished, and we will be working hard to make sure we can produce a more complete report in two years' time.

Jamie Muir

Statement of Management Responsibility

The information in "Reporting to Nova Scotians on Comparable Health and the Health System Indicators: Technical Report" that originates from the information systems of the Nova Scotia Department of Health is the responsibility of this department. This responsibility consists of maintaining the required information systems and adequate controls to ensure that the information generated by the systems is accurate and that the performance indicators and related explanations found in the report are reliable.

The Department's responsibility regarding the information produced by outside organizations (e.g., Statistics Canada, Health Canada, Canadian Institute for Health Information (CIHI)) consists of providing them with reliable data, carrying out work to validate the results that these organizations provide to the Nova Scotia Department of Health, and providing explanations of the results obtained. These outside organizations are responsible for processing the information received by the Department according to the procedures agreed upon.

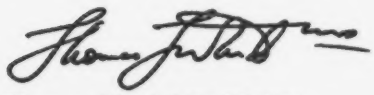
The framework for reporting is determined by the provisions of the Communiqué on Health from the First Ministers' meeting of September 11, 2000 and by the definitions, technical specifications, and standards of presentation included in the "Plan for FPT Reporting on 14 Indicator Areas" approved by the Conference of Deputy Ministers on June 10, 2002.

The data for many of these indicators originate from sources such as patient records, death certificates and reported instances of diseases. The completeness and accuracy of diagnoses and reporting are the collective responsibility of health professionals, District Health Authorities and the Department of Health. The Department believes the controls in place are adequate to ensure the completeness and accuracy of this data, and has provided the documentation of specific controls to the Auditor General.

Despite these controls, there are inherent limitations in certain of the indicators. For example, there may be a time lag between infection and diagnosis of reportable diseases. By reporting only the number of positive cases tested and confirmed, there may be a number of unreported cases unknown to the reader. Similarly, an individual may have suffered from multiple conditions and the primary cause of death may be uncertain. For each indicator, the Department has noted any concerns about the accuracy, completeness and comparability under the heading Limitations.

The Auditor General of Nova Scotia audited the performance indicators in this report. The auditor's findings are positive in general, however there are several indicators for which the auditor was unable to form an opinion. We intend to work with our partners and the auditor to continue to improve systems and controls to ensure the auditor can form an opinion on all indicators when similar reports are audited in the future. For example, CIHI, an independent not-for-profit organization working to compile and report quality, reliable and timely health information collected by hospitals and other sources, is undertaking a process to audit and confirm data quality processes and standards. The three-year abstraction study will provide information on the quality of the input data when it is completed in two years.

4 In our opinion, the data presented in the PIRC Report to Nova Scotians on Health and the Health System is reliable and is a fair presentation of the health performance indicators as of September 30, 2002.



Thomas Ward, MD, FRCPC
Deputy Minister of Health

Auditor's Report

To the Minister of Health and the Members of the Legislative Assembly of Nova Scotia:

I have audited the health indicators presented in the Nova Scotia Department of Health's Reporting to Nova Scotians on Comparable Health and Health System Indicators: Technical Report, dated September 30, 2002. The Conference of Deputy Ministers defined the specific indicators to be regularly reported to Canadians. Reporting health indicators is the responsibility of the Department of Health. My responsibility is to express an opinion on the health indicators based on my audit. However, my responsibility does not extend to assessing the performance achieved or the relevance of the health indicators.

Except as explained, in the following four paragraphs, I conducted my audit in accordance with the standards for assurance engagements of the Canadian Institute of Chartered Accountants. Those standards require that I plan and perform an audit to obtain reasonable assurance whether the health indicators are free of significant misstatement. To this end, I audited these health indicators to determine whether they meet the criteria set out in Appendix 1. My audit included examining, on a test basis, evidence supporting the health indicators and disclosures. My audit also included assessing significant judgments made by management of the Department of Health. My audit was limited to information relating to the most recent year in which each indicator was reported. Since my audit was limited to those indicators defined by the Conference of Deputy Ministers, two of the indicators included in the Department of Health's Report were not included in my audit:

- Radiation Therapy Wait Times (Department of Health has noted a significant departure from the requirements established by the Conference of Deputy Ministers)
- Ground Ambulance Response Times for Emergency Calls (not required by the Conference of Deputy Ministers)

Data used for seven indicators were drawn from the relevant Canadian Institute for Health Information (CIHI) databases:

- 30-day Acute Myocardial Infarction In Hospital Mortality Rate
- 30-day Stroke In Hospital Mortality Rate
- Total Knee Replacement Rate
- Total Hip Replacement Rate
- Risk Adjusted Acute Myocardial Infarction Re-Admission Rate
- Risk Adjusted Pneumonia Re-Admission Rate; and
- Age Standardized Rate of Hospitalization for Ambulatory Care Sensitive Conditions

6 At this time, I am unable to provide an opinion on the accuracy of the data and the adequacy of disclosure on limitations of the data drawn from the Discharge Abstract/Hospital Morbidity Database of the Canadian Institute for Health Information for the indicators named above. My inability to provide an opinion is due to a lack of documentation of the CIHI quality assurance process, and because CIHI's three-year abstraction study, which will provide information on the quality of input data, will not be completed for another two years.

Data for two indicators were drawn from Statistics Canada:

- Five year Age Standardized 365-day Acute Myocardial Infarction Survival Rate
- Five year Age Standardized 180-day Stroke Survival Rate

I was unable to conclude on the accuracy of these two indicators because Statistics Canada uses as one of its data sources the Discharge Abstract Database (DAD) maintained by CIHI, and Statistics Canada has not made a formal determination of the quality of the data it receives from this database.

Health Canada maintains national databases for eight disease surveillance indicators:

- Invasive Meningococcal Disease Incidence Rate
- Measles Incidence Rate
- Haemophilus Influenza B(Invasive) (HIB) Incidence Rate
- Prevalence of Diabetes
- Tuberculosis Incidence Rate
- Reported HIV Diagnoses
- Verotoxogenic E Coli Incidence Rate; and
- Chlamydia Incidence Rate

Participation in these databases is voluntary, and there is a lack of formal federal/provincial/territorial agreements on data sharing, data standards and data definitions. The quality assurance processes for these databases are inadequate to ensure the accuracy of the data, and Health Canada states, in the Federal health indicators report, that improvements are required in data quality. The Nova Scotia Department of Health decided to draw the data for seven of these indicators (all except Prevalence of Diabetes) from databases at the Nova Scotia Department of Health rather than Health Canada. I audited the seven indicators drawn from Nova Scotia databases (all except Prevalence of Diabetes) and found them to be accurate. I am unable to conclude on the adequacy of disclosure for these eight indicators.

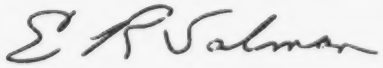
The Home Care Admissions indicator data were drawn from Home Care Nova Scotia records. As noted in the report by the Department of Health, the source data for this indicator could not be verified and may include multiple admissions for the same client. All records required to audit the data had not been retained by the Department of Health. Therefore, I am unable to form an opinion on the accuracy of the data or on the adequacy of disclosure for this indicator.

In my opinion, except for the 18 indicators mentioned in the preceding four paragraphs, the remaining indicators included in the Department of Health's Report and subject to
In my opinion, except for the 18 indicators mentioned in the preceding four paragraphs, the remaining indicators included in the Department of Health's Report and subject to my audit are, in all significant respects, presented fairly in accordance with the criteria in Appendix 1 and the definitions approved by the Conference of Deputy Ministers. Furthermore, the Department of Health has noted four indicators where there is a departure from the requirements established by the Conference of Deputy Ministers. I have determined that the circumstances relating to those departures were properly described by the Department of Health.

The Department of Health indicated that three of these indicators could not be presented because the source data is not presently available, and that an additional indicator (Cardiac Wait Times) departs in some respects from the definition established by the Conference of Deputy Ministers because of the way in which the data were compiled by the Maritime Heart Centre.

The Nova Scotia report includes comparative health indicators relating to other governments (provincial, territorial, and federal). Health indicators for some provinces and territories and for Canadian government programs have been audited by legislative auditors while, for other provinces, legislative auditors have been engaged to perform specified auditing procedures. Appendix 2 includes an explanation of the difference between these two types of engagements, and details regarding the nature of the engagement performed in each of the jurisdictions. The auditors' findings and observations resulting from engagements in other Canadian jurisdictions are included in the respective governments' reports and are neither reproduced in the Nova Scotia Department of Health report nor audited by my Office.

This is not the first time that Nova Scotia has reported health system data to the public. However, it is the first cooperative effort between federal, provincial and territorial governments to report to their own citizens on health system performance using the same set of comparable indicators. This new process will improve Nova Scotia's ability to gather useful health care data and report health system performance to its residents along with comparisons to other provinces and territories. I am encouraged by the work undertaken by the Nova Scotia Department of Health in the preparation of this report.



E. Roy Salmon, FCA
Auditor General

Halifax, Nova Scotia
September 23, 2002

Appendix 1

Audit Criteria

Complete

The health indicators reported comply with the definitions, technical specifications and standards of presentation approved by the Conference of Deputy Ministers.

Accurate

The PIRC-defined health indicators reported based on Nova Scotia data adequately reflect the facts, to an appropriate level of accuracy.

Adequate disclosure

The health indicators are defined and their significance and limitations are explained. The report states and properly describes departures from what was approved by the Conference of Deputy Ministers and explains plans for the future resolution of any non-compliance issues.

Appendix 2

Verification of Comparative Information from Other Jurisdictions

The governments of Canada, the Provinces and the Territories have adopted different approaches to meet the September 2000 First Ministers Meeting Communiqué on Health requirement with respect to "third party verification" for their health reports. Some have engaged their legislative auditor to provide audit assurance on their health reports and others have asked for specified auditing procedures to be applied. The paragraphs below outline the major differences between an audit assurance engagement and a specified auditing procedures engagement. For a complete comparison, please refer to CICA Handbook Section 5025 for audit assurance engagements and Section 9100 for specified auditing procedures engagements. I believe, for reasons described in the following paragraphs, that an audit under CICA Handbook Section 5025 is the advisable approach.

In an attest audit engagement, the auditor's responsibility is to offer assurance to users, in the form of an audit opinion, on a report prepared by management. The auditor determines the nature, extent, timing, appropriateness and sufficiency of audit procedures, which, in the auditor's judgment, are necessary to provide assurance concerning the subject matter, or the health care report in the present context.

In a specified auditing procedures engagement, the auditor's responsibility is to report the results of applying auditing procedures specified by management. As the extent of specified auditing procedures may vary from engagement to engagement, such engagements are difficult to compare. And since the extent of the procedures performed are not sufficient to constitute an audit, the reports do not provide an audit opinion. Reports state those procedures actually applied and only the factual results of those procedures, leaving the reader to determine the fairness of the information.

The following is a list of jurisdictions that have engaged their legislative auditor to provide audit assurance on their health reports and those that have asked for specified auditing procedures to be applied.

Audit opinion **CICA 5025**	Specified Auditing Procedures **CICA 9100**
Nova Scotia	Alberta
British Columbia	Ontario
Saskatchewan	New Brunswick
Manitoba	Prince Edward Island
Quebec	Newfoundland and Labrador
Canada	
Yukon	
Northwest Territories	
Nunavut	

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Health Status

Life Expectancy

- **Life Expectancy at Birth**
- **Disability Free Life Expectancy at Birth**

Infant Mortality

Low Birth Weight

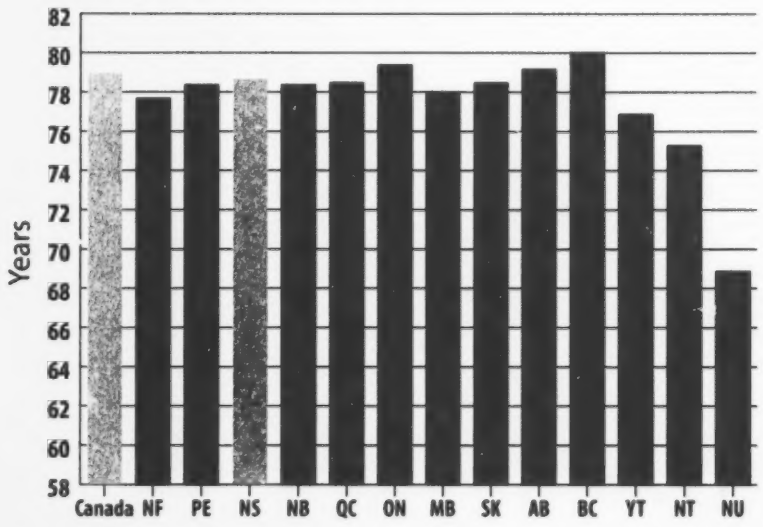
- **Low Birth Weight**
- **Self Reported Health**

Life Expectancy

Definition

The number of years a person would be expected to live, starting from birth on the basis of the mortality statistics for a given observation period, typically a calendar year. (The 1999 indicator is the number of years a person born in 1999 would be expected to live.)

Life Expectancy at Birth
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division; ISQ.

Significance – Rationale and Notes for Interpretation

Life expectancy is a widely used indicator of the health of a population. In developed countries, life expectancy is higher for women than for men, and is related to socio-economic factors such as poverty and education levels. The highest life expectancies in the world in 1999 were in Japan: 84.1 for women, and 77.3 for men.

It should be noted that life expectancy is an indicator of the quantity rather than quality of life. Increases in life expectancy that are associated with increased prevalence of serious debilitating disease may not be judged to be as worthwhile as the same increase in life expectancy where the added years are lived in good health.

Life expectancy is a standardized statistical indicator. It is not the number of years a particular newborn can actually expect to live. The reason is that mortality rates only for the observation period (e.g. 1998) are used, and these are averages for the entire population. Historically, mortality rates in Canada have been falling, so that the mortality rates individuals are likely to face in future years as they age may be lower. Individuals' circumstances vary so that, for example, if they had been a long time smoker, or had a family history of disease, their particular life expectancy would be less.

20 **Life Expectancy at Birth**
Nova Scotia vs Canada, 1980 - 1999

Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division; ISQ.

Technical Specifications

Calculation: Life expectancy is calculated using mortality rates with Greville's method for abridged life tables, using five-year age groupings of both population and mortality rate.[1]

Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division (population estimates); ISQ

Disclosures

Exclusions: Non-residents of Canada are excluded from the deaths and population estimates used for the life tables.

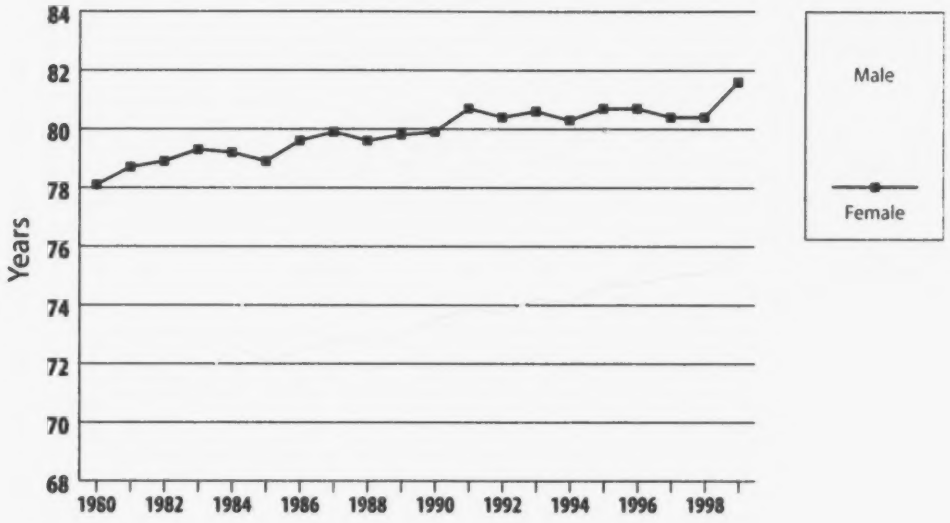
Limitations: Estimates are based on three years of death data.

Departures from PIRC Requirements: N/A

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

Life Expectancy at Birth
Nova Scotia by Sex, 1980 - 1999



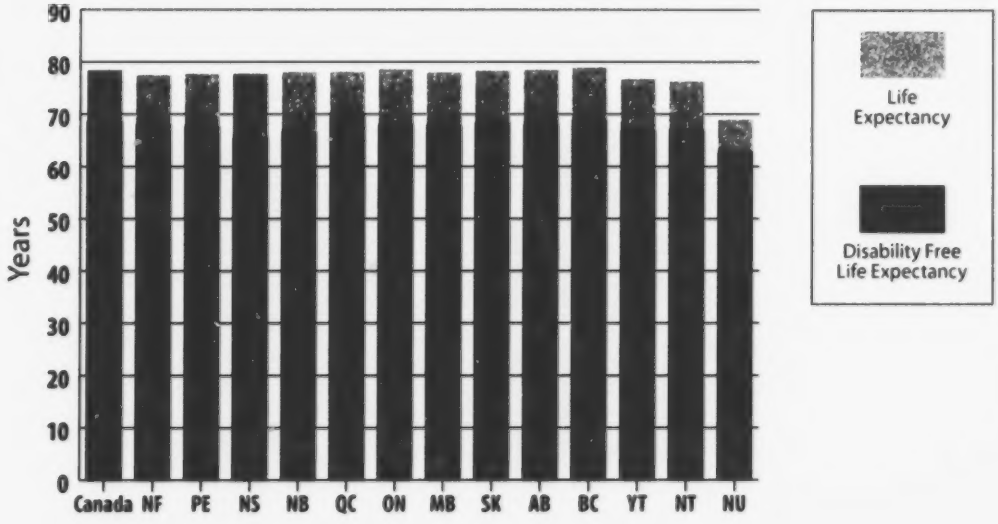
Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division.

22 Disability Free Life Expectancy

Definition

The number of years an average individual would be expected to live free of moderate or severe disability, starting from birth on the basis of the mortality statistics and disability prevalence patterns by age and sex for a given observation period, typically a calendar year.

Life Expectancy and Disability Free Life Expectancy at Birth
Canada and Provinces, 1996



Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division

Significance – Rationale and Notes for Interpretation

DFLE is an increasingly used indicator, and complements conventional life expectancy measures. It was developed to reflect the fact that not all years of a person's life are typically lived in perfect health. Chronic disease, frailty, and disability tend to become more prevalent at older ages, so that a population with a higher life expectancy may not be healthier.

Indeed, a major question with an aging population is whether increases in life expectancy will be associated with a greater or lesser proportion of the future population spending their years living with disability. If DFLE is increasing more rapidly than life expectancy in a population, then not only are people living longer, they are also living a greater portion of their lives free of disability.

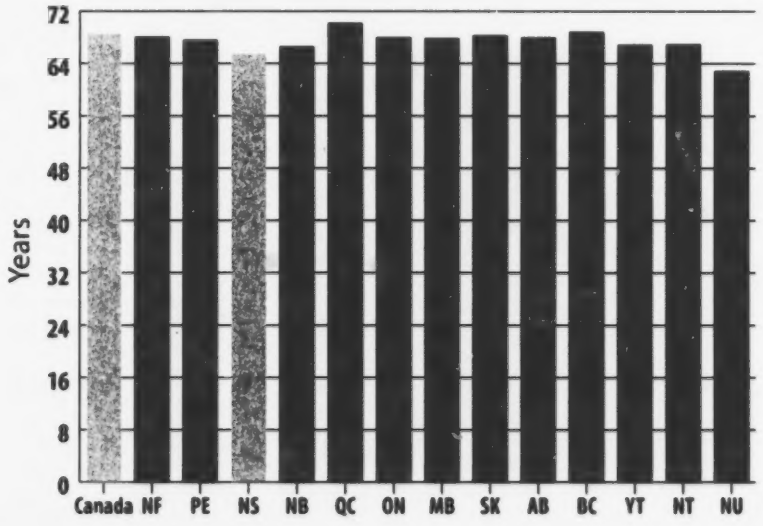
While various thresholds are possible, disability here is specified as moderate and severe disability, plus living in an institution. Thus, anyone with moderate or severe disability or who lives in an institution is counted as disabled, and everyone else, even with some disability, is counted as not disabled.

Technical Specifications

Calculation: Life expectancy is calculated using mortality rates with Greville's method for abridged life tables, using five-year age groupings of both population and mortality rate.

Source: Statistics Canada, Vital Statistics, Death Database and Demography division; census (institutional population counts).

Disability Free Life Expectancy at Birth
Canada and Provinces, 1996



Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division.

Disclosures

Exclusions: Non-residents of Canada are excluded from the deaths and population estimates used for the life tables. In addition, individuals living on military bases or First Nation reserves are excluded from the health survey and are thus implicitly treated as having the same average rates of disability as the rest of the population.

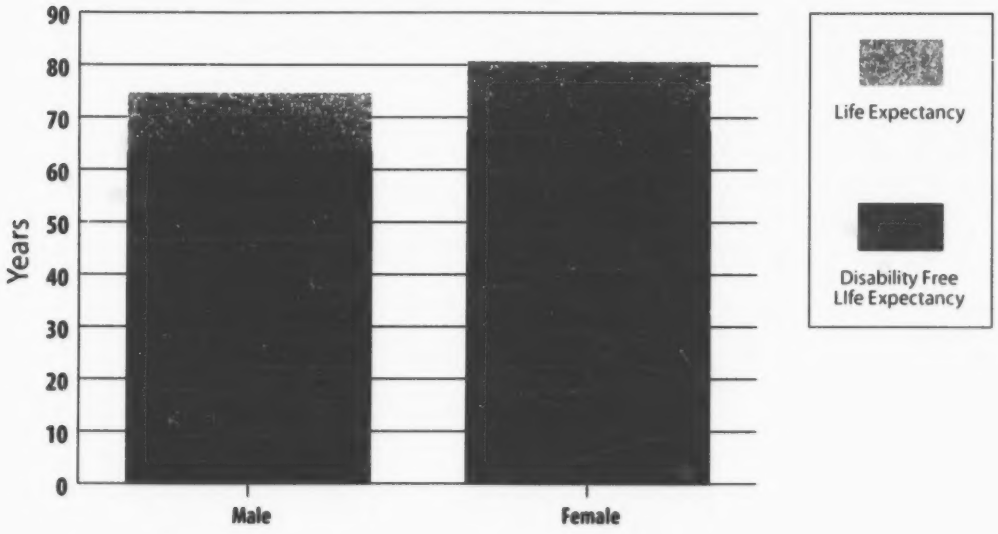
Limitations: Note that this indicator is calculated for only the most recent data year available (1996); trends are not available. Estimates are based on three years of death data.

Departures from PIRC Requirements: Confidence Intervals are not presented in this document. Confidence intervals are available upon request to the Department of Health, Performance Measurement and Health Information Branch. Data were not provided to report on socioeconomic characteristics such as education, income, etc.

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

Life Expectancy and Disability Free Life Expectancy at Birth Nova Scotia by Sex, 1996



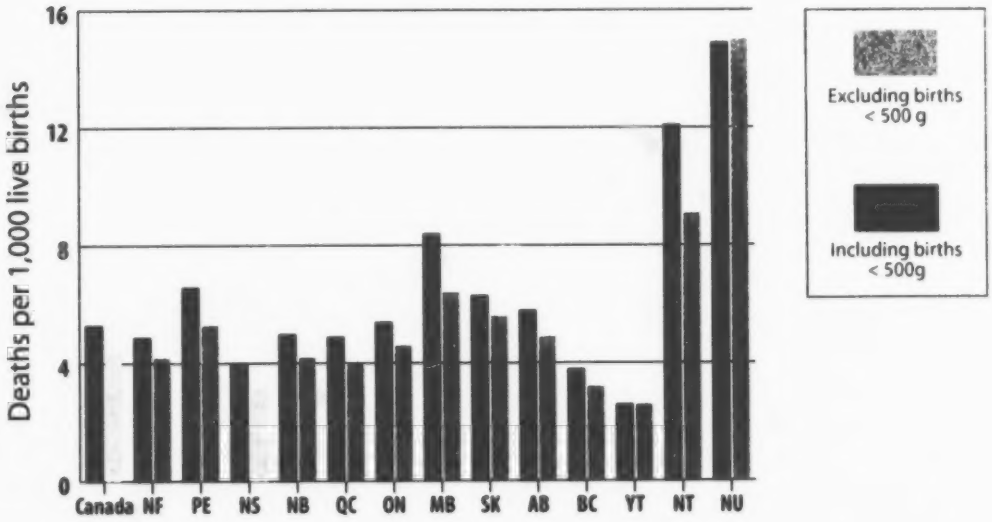
Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division.

Infant Mortality

Definition

The number of infants who die in the first year of life, expressed as a rate (per 1,000 live births) for that year.

Infant Mortality
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division; ISQ.

Significance – Rationale and Notes for Interpretation

The infant mortality rate is a long-established measure of child health as well as the well being of a society. It reflects not only the level of mortality, but also the health status and health care of a population, the effectiveness of preventive care and the attention paid to maternal and child health, as well as broader social factors such as maternal education, smoking and relative deprivation. The average infant mortality rate in 1997 for 29 of 30 developed countries was 7.3 infant deaths per 1000 live births, compared with 5.5 per 1000 in Canada[1]. Among developed countries, an infant mortality rate of less than 4.0 per 1,000 is considered exceptionally good. Only Japan and Iceland had achieved such low rates by 1996. Low birth weight in Canada is now the principle risk factor associated with infant mortality. Pre-term births account for approximately 75-85% of all perinatal mortality in Canada[1]

26 Technical Specifications

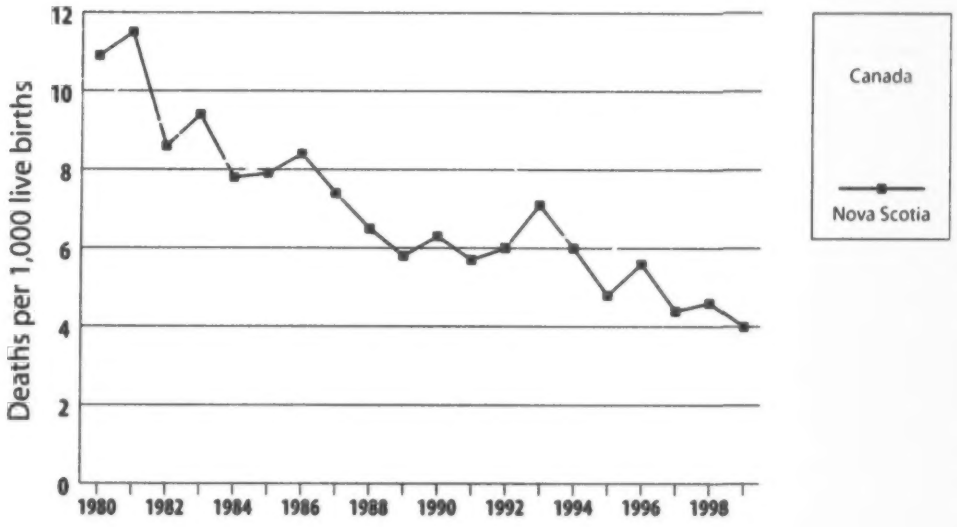
Numerator: Number of deaths (excluding estimated number weighing less than 500 grams at birth) at less than one year of age, in a given year

Denominator: Total live births weighing at least 500 grams in a given year

Calculation: Number of deaths divided by total live births X 1,000

Source: Statistics Canada, Vital Statistics, Births and Deaths data bases; ISQ

Infant Mortality (All Birth Weights)
Nova Scotia vs Canada, 1980 - 1999



Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division, ISQ.

Disclosures

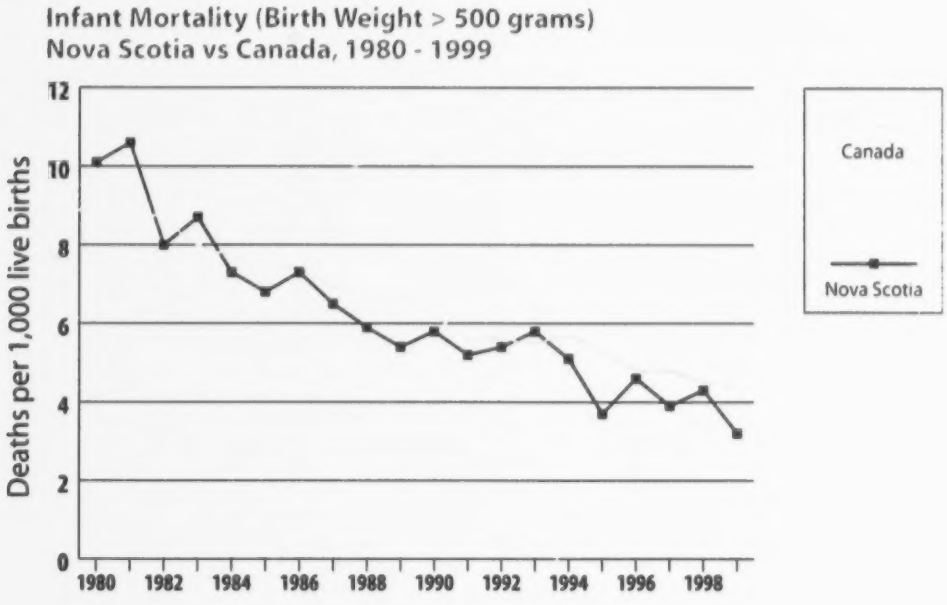
Exclusions: Births to mothers not resident in Canada, and infant deaths to non-residents of Canada. Infants born outside the province/territory of residence of their mothers or infants who die outside the province/territory of their mother are included in the rates for the mother's province/territory of residence. For example, Hull, Quebec babies who die in Ontario are not counted in the infant mortality rates for Ontario; they are counted in the infant mortality rates for Quebec. Infant deaths where province or territory of residence is unknown are also excluded.

Limitations: N/A

Departures from PIRC Requirements: Data were not provided for reporting by gestational age, very low or very high birth weight or rural and urban comparisons. Neonatal mortality data were not provided.

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada.



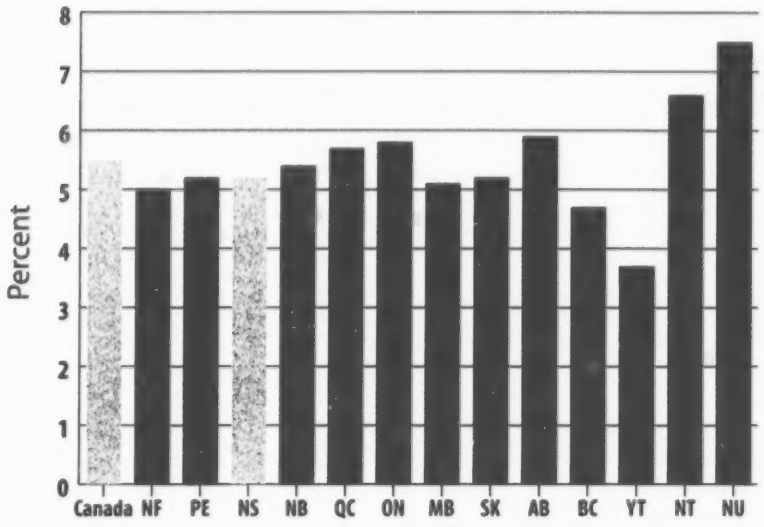
Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division; ISQ.

28 Low Birth Weight

Definition

The proportion of live births (birth weight known) with a birth weight less than 2500 grams and at least 500 grams

Low Birth Weight (500 grams to 2500 grams)
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division; ISQ.

Significance – Rationale and Notes for Interpretation

Low birth weight is an indicator of the general health of newborns, and a key determinant of infant survival, health and development. Low birth weight infants are at a greater risk of dying during the first year of life, and if they survive, they have a greater risk of disability and diseases such as cerebral palsy, visual problems, learning disabilities and respiratory problems. Low birth weight is associated with multiple births (twins, triplets, etc.), pre-term births, poor maternal health, lifestyle and economic circumstances. It is also associated with assisted conception (and related multiple births).

Appropriate medical care and a healthy lifestyle for the mother can improve the chances that the baby will have a healthy birth weight. It should be noted that a potentially confounding factor is variations in the ethnic composition of the population since some ethnic groups tend to have babies of lower weight, even though these infants are otherwise healthy.

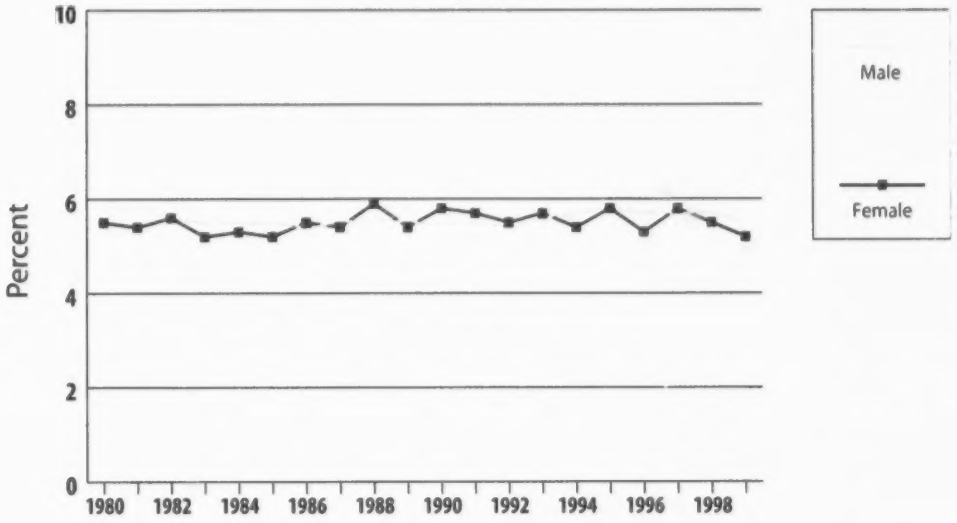
The low birth weight rate in 1997 for 26 of 30 developed countries was 6.1% of live births, compared with 5.8% in Canada[1]. Among developed countries, a low birth weight rate of less than 5.0 is considered good.

Over time, there has been improved reporting of live births <500 grams; to improve comparability over time in reporting on low birth weight, births under 500 grams are excluded.

Births with unknown birth weights are also excluded from the calculation.

There are some concerns with comparability of this indicator in specific jurisdictions due to missing birth registrations or data quality problems. Historic problems have been identified. Any problems with comparability in later years will be noted with the release of these data.

Low Birth Weight (500 grams to 2500 grams)
Nova Scotia vs Canada, 1980 - 1999



Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division, ISQ.

Technical Specifications

Numerator: Number of live births ≥500 and <2500 grams within the specified year

Denominator: Total live births with known birth weight ≥500 grams within the specified year

Calculation: Low birth weight percentage = (Numerator/Denominator) x 100

- Births are assigned to jurisdiction by mother's P/T of residence
- No adjustment for age of mother

Source: Statistics Canada, Vital Statistics, Birth Database; ISQ

30 Disclosures

Exclusions: Births with unknown birth weight; births to mothers not resident in Canada are excluded from the numerator and denominator; infants born outside the province/territory of residence of their mothers are included in the rates for the mother's province/territory of residence.

Limitations: N/A

Departures from PIRC Requirements: None

Plans for Future Reporting

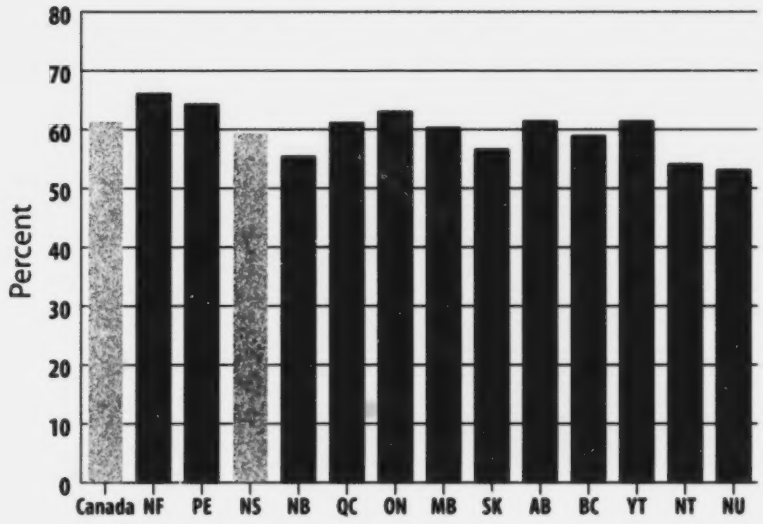
This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

Self Reported Health

Definition

Percent of the population age 12 + who report that their health is very good or excellent.

Self-Reported Health Excellent or Very Good
Canada and Provinces, 2000



Source: Statistics Canada, Canadian Community Health Survey, 2000/2001, ISQ.

Significance – Rationale and Notes for Interpretation

Self-reported health is a general indicator of the overall health status of individuals. It can include what other measures may miss: incipient disease, disease severity, some aspects of positive health status, physiologic/psychological reserve, social and mental function.

Self-reported health data is collected using a five point reporting scale, ranging from excellent to poor. Studies indicate that when individuals rate their health in response to this question, they tap into information that has important predictive power relating to chronic disease incidence, functional decline and ultimately survival. Numerous longitudinal studies have found that self-reported health is predictive of mortality even when more objective measures such as clinical evaluations are taken into account. Inconsistencies between self-reported health data from population surveys and best estimates from epidemiological studies (under-reporting of undiagnosed conditions, over-reporting of some conditions, lack of information on condition severity) may explain why measures of self-reported health do not have credibility with all groups. This indicator applies to individuals' 12 years old and older living in private households.

32 Technical Specifications

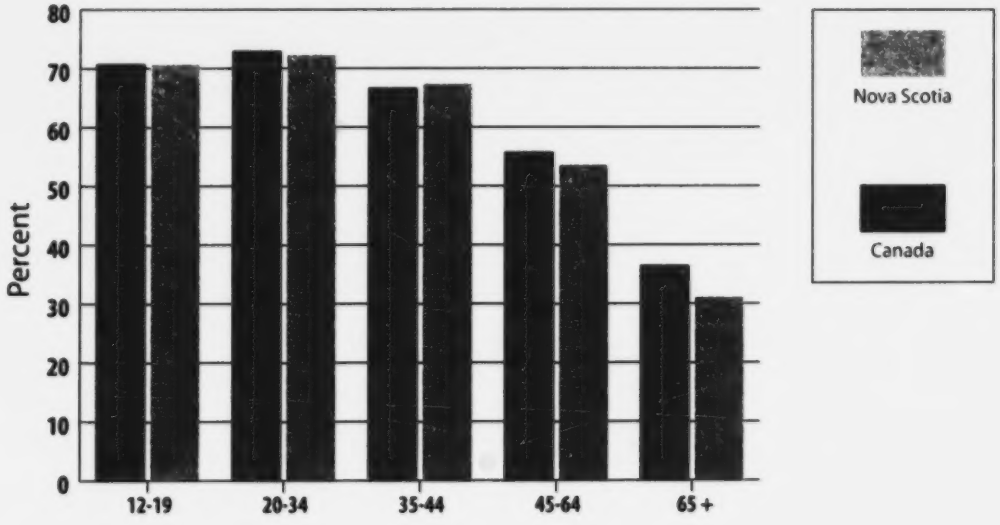
Numerator: Estimated number of persons reporting excellent or very good health within a survey cycle for a given jurisdiction (response categories are excellent, very good, good, fair, poor)

Denominator: Total population aged 12 and over in the jurisdiction

Calculation: (Numerator/Denominator) x 100, with weighting adjusted to reflect non-response

Source: Statistics Canada, Canadian Community Health Survey – Cycle 1.1 – 2000/2001; National Population Health Surveys (1994-95 to 1998-99); ISQ

Self-Reported Health Excellent or Very Good
Nova Scotia vs Canada by Age Group, 2000



Source: Statistics Canada, Canadian Community Health Survey, 2000/2001, ISQ.

Disclosures

Exclusions: Persons living on First Nation Reserves and on Crown lands, residents of institutions, full-time member of Canadian Armed Forces and residents of certain remote regions are excluded from the sample. Persons less than 12 years of age are not surveyed.

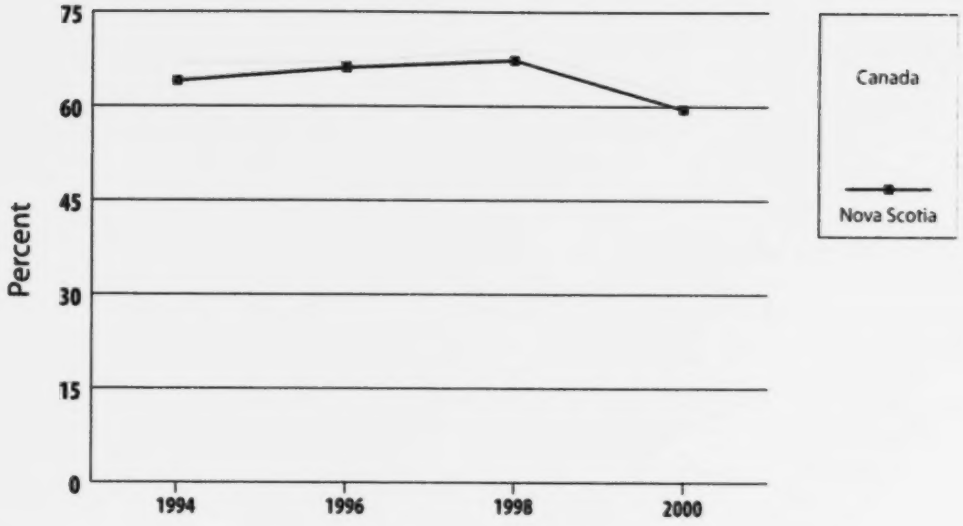
Limitations: None

Departures from PIRC Requirements: None

Plans for Future Reporting

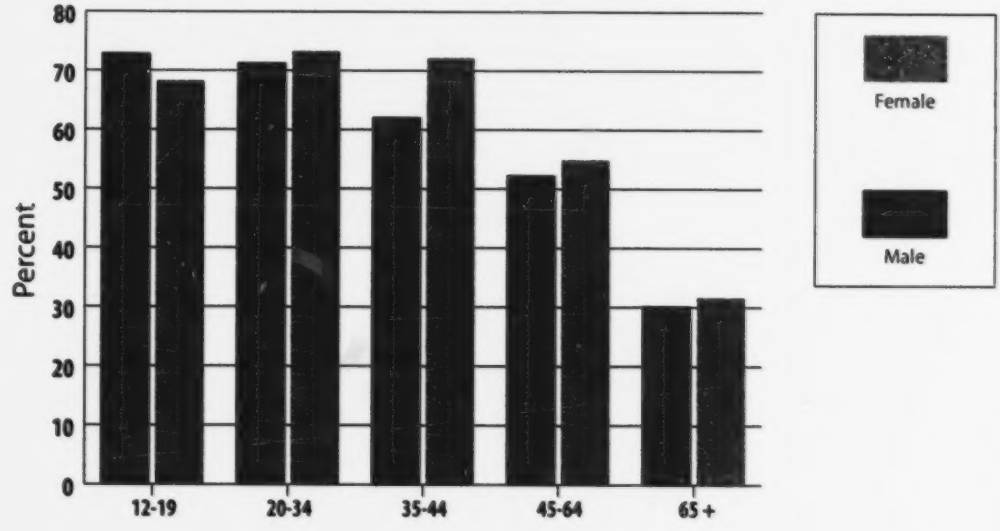
This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

Self-Reported Health Excellent or Very Good
Nova Scotia vs Canada, 1994 - 2000



Source: Statistics Canada, Canadian Community Health Survey, 2000/2001, National Population Health Surveys, 1994/96/98; ISQ.

Self-Reported Health Excellent or Very Good
Nova Scotia by Sex and Age Group, 2000



Source: Statistics Canada, Canadian Community Health Survey.

Health Outcomes

Change in Life Expectancy

Mortality Rates for Cancer, AMI, Stroke

Relative Survival Rates for Cancer

30-day AMI In-hospital Mortality

30-day Stroke In-hospital Mortality

365-day Relative Survival Rate for AMI

180-day Relative Survival Rate for Stroke

Improved Quality of Life

Total Knee Replacement Surgery Rate

Total Hip Replacement Surgery Rate

Reduced Burden of Disease, Illness and Injury

Incidence Rates for Cancer, AMI,

Potential Years of Life Lost due to Cancer, AMI, Stroke, Unintentional Injury, Suicide

Incidence Rates of Selected Vaccine-Preventable Diseases

Prevalence of Diabetes

Age Standardized Colorectal Cancer Mortality Rate

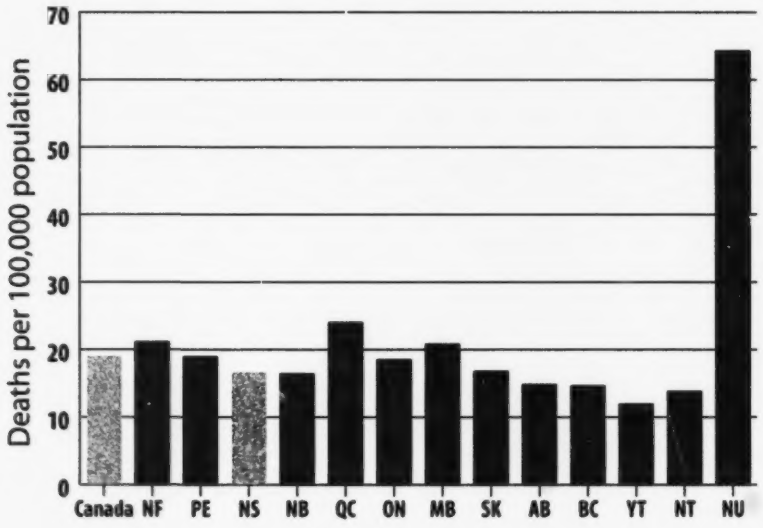
Definition

The reported number of deaths of individuals where the underlying cause of death is colorectal cancer, per 100,000 population, that would have occurred in the standard population if the actual age-specific rates observed in a given population had occurred in the standard population.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?" The rates shown therefore do not cite the actual number of observed cases, but the numbers of expected cases in the standard population.

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized Colorectal Cancer Mortality Rate
Canada and Provinces, 1999

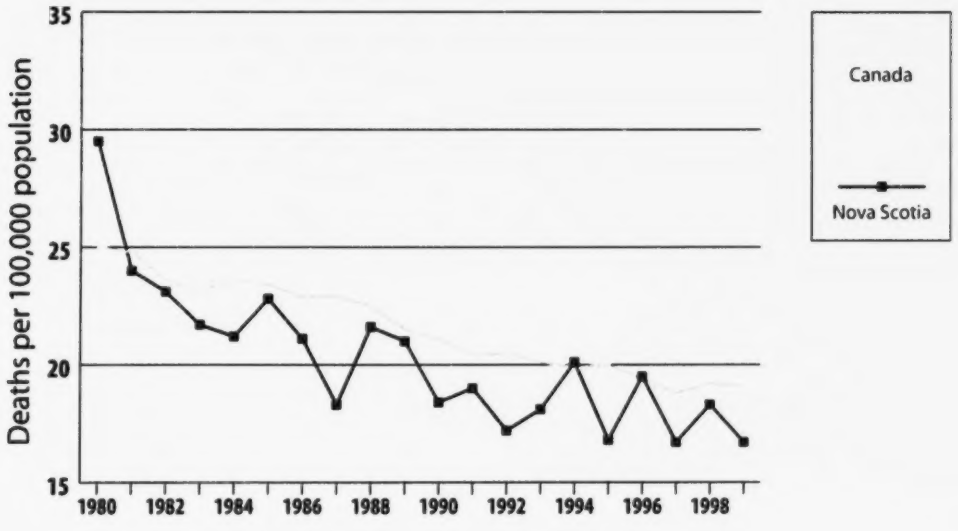


Source: Statistics Canada, Vital Statistics and Demography Division; ISQ.

38 Significance – Rationale and Notes for Interpretation

Age-standardized cancer or AMI or stroke death rate trends may indicate long-term success in reducing deaths from these diseases, compared with other provinces and countries. Lower death rates indicate success in cancer or cardio-vascular disease prevention, detection, and treatment.

Age Standardized Colorectal Cancer Mortality Rate
Nova Scotia vs Canada, 1980 - 1999



Source: Statistics Canada, Vital Statistics, Birth and Death Databases and Demography Division; ISQ.

Technical Specifications

Calculation: The age-standardized rate for cancer of the colon/rectum (ICD-9 153-154) is calculated by multiplying each observed age-specific death rate by the standard population in the corresponding age-group, summing the results, multiplying the sum by 100,000 and then dividing the product by the total standard population. The 1991 Canadian population is used as the standard population.

Source: Statistics Canada, Vital Statistics, and Demography Division; ISQ

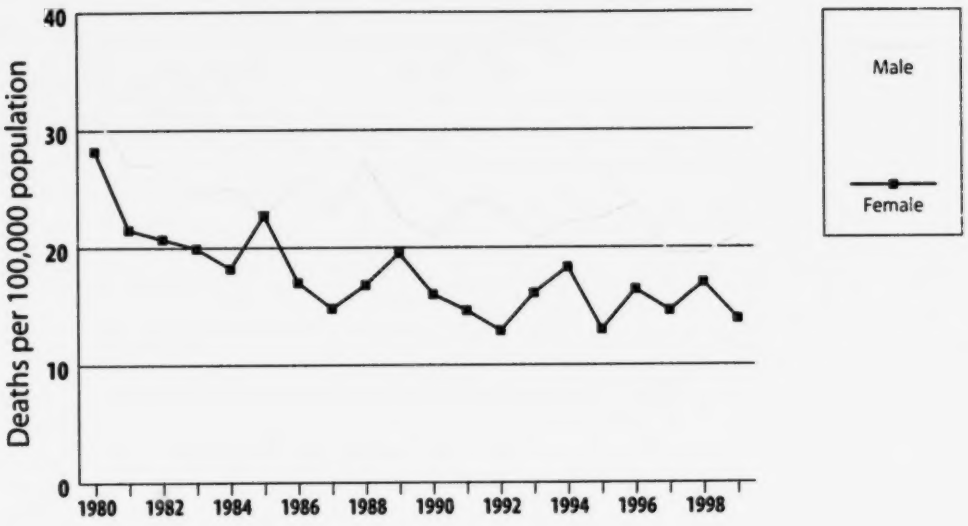
Disclosures

Exclusions: Deaths of non-residents of Canada are excluded.

Limitations: N/A

Departures from PIRC Requirements: None

Age Standardized Colorectal Cancer Mortality Rate
Nova Scotia by Sex, 1980 - 1999



Source: Statistics Canada, Vital Statistics and Demography Division.

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada. From 1979 to 1999, the underlying cause of death was coded using ICD-9; beginning with 2000, the underlying cause of death will be coded using ICD-10, thus introducing discontinuity to the trend data.

40 Age Standardized Lung Cancer Mortality Rate

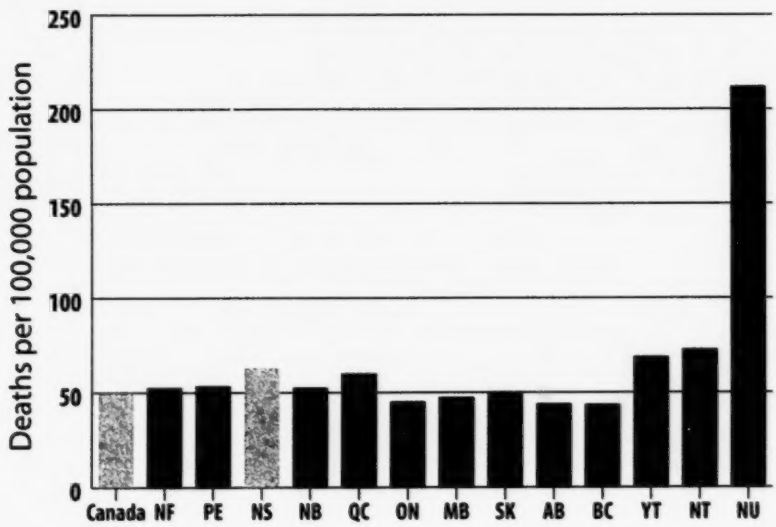
Definition

The reported number of deaths of individuals where the underlying cause of death is lung cancer, per 100,000 population, that would have occurred in the standard population if the actual age-specific rates observed in a given population had occurred in the standard population.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?" The rates shown therefore do not cite the actual number of observed cases, but the numbers of expected cases in the standard population.

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized Lung Cancer Mortality Rate
Canada and Provinces, 1999

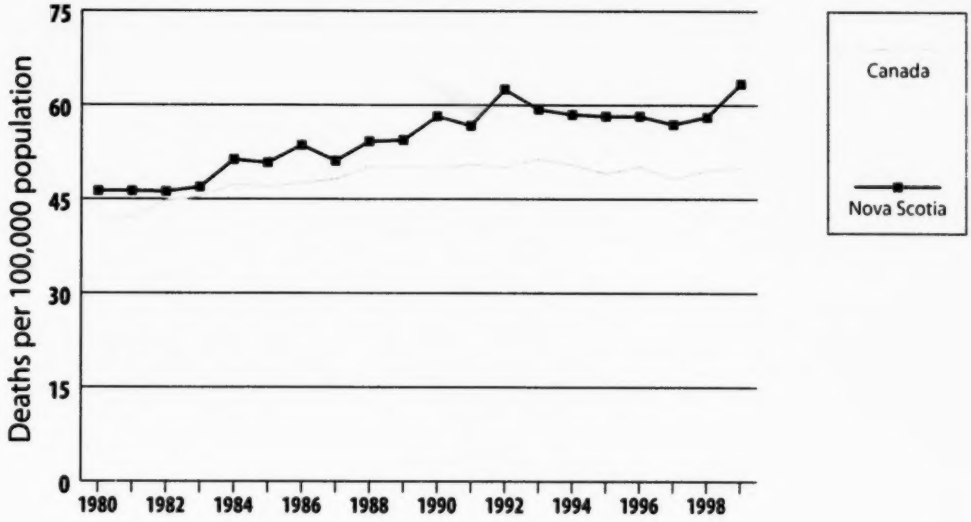


Source: Statistics Canada, Vital Statistics and Demography Division; ISQ.

Significance – Rationale and Notes for Interpretation

Age-standardized cancer or AMI or stroke death rate trends may indicate long-term success in reducing deaths from these diseases, compared with other provinces and countries. Lower death rates indicate success in cancer or cardio-vascular disease prevention, detection, and treatment.

Age Standardized Lung Cancer Mortality Rate
Nova Scotia vs Canada, 1980 - 1999



Source: Statistics Canada, Vital Statistics and Demography Division; ISQ.

Technical Specifications

Calculation: The age-standardized rate for cancer of the lung (ICD-9 162) is calculated by multiplying each observed age-specific death rate by the standard population in the corresponding age-group, summing the results, multiplying the sum by 100,000 and then dividing the product by the total standard population. The 1991 Canadian population is used as the standard population.

Source: Statistics Canada, Vital Statistics, and Demography Division; ISQ

Disclosures

Exclusions: Deaths of non-residents of Canada are excluded.

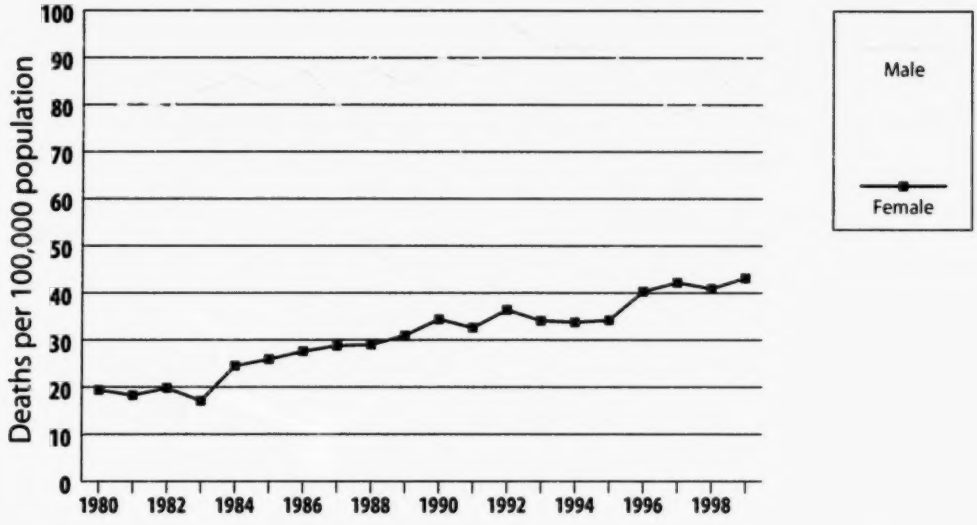
Limitations: N/A

Departures from PIRC Requirements: None

42 Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada. From 1979 to 1999, the underlying cause of death was coded using ICD-9; beginning with 2000, the underlying cause of death will be coded using ICD-10, thus introducing discontinuity to the trend data.

Age Standardized Lung Cancer Mortality Rate
Nova Scotia by Sex, 1980 - 1999



Source: Statistics Canada, Vital Statistics and Demography Division.

Age Standardized Prostate Cancer Mortality Rate

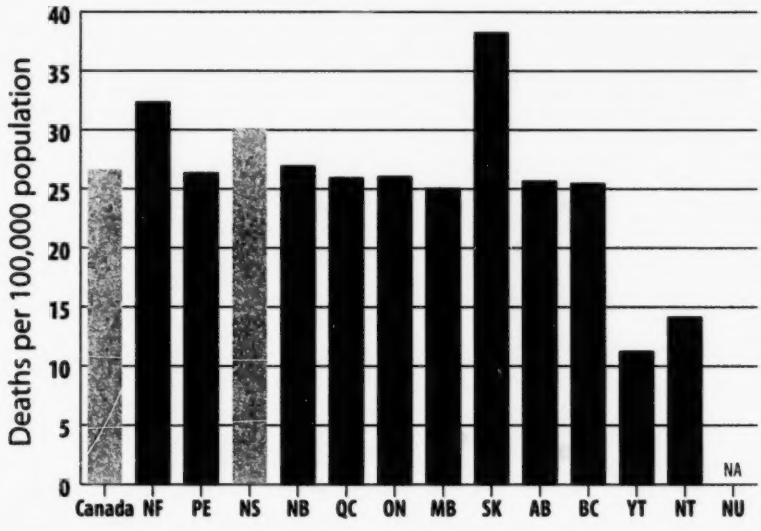
Definition

The reported number of deaths of individuals where the underlying cause of death is prostate cancer, per 100,000 population, that would have occurred in the standard population if the actual age-specific rates observed in a given population had occurred in the standard population.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?" The rates shown therefore do not cite the actual number of observed cases, but the numbers of expected cases in the standard population.

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized Prostate Cancer Mortality Rate
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics and Demography Division; ISQ.

Significance – Rationale and Notes for Interpretation

Age-standardized cancer or AMI or stroke death rate trends may indicate long-term success in reducing deaths from these diseases, compared with other provinces and countries. Lower death rates indicate success in cancer or cardio-vascular disease prevention, detection, and treatment.

Technical Specifications

Calculation: The age-standardized rate for cancer of the prostate (ICD-9 185 is calculated by multiplying each observed age-specific death rate by the standard population in the corresponding age-group, summing the results, multiplying the sum by 100,000 and then dividing the product by the total standard population. The 1991 Canadian population is used as the standard population.

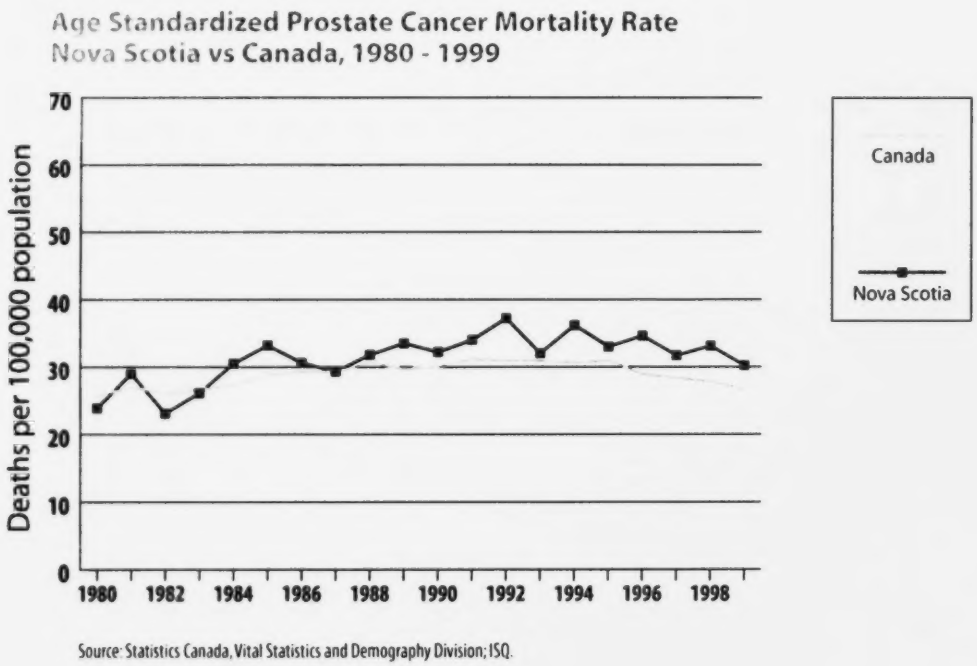
Source: Statistics Canada, Vital Statistics, and Demography Division; ISQ

Disclosures

Exclusions: Deaths of non-residents of Canada are excluded.

Limitations: N/A

Departures from PIRC Requirements: None



Source: Statistics Canada, Vital Statistics and Demography Division; ISQ.

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada. From 1979 to 1999, the underlying cause of death was coded using ICD-9; beginning with 2000, the underlying cause of death will be coded using ICD-10, thus introducing discontinuity to the trend data.

Age Standardized Breast Cancer Mortality Rate

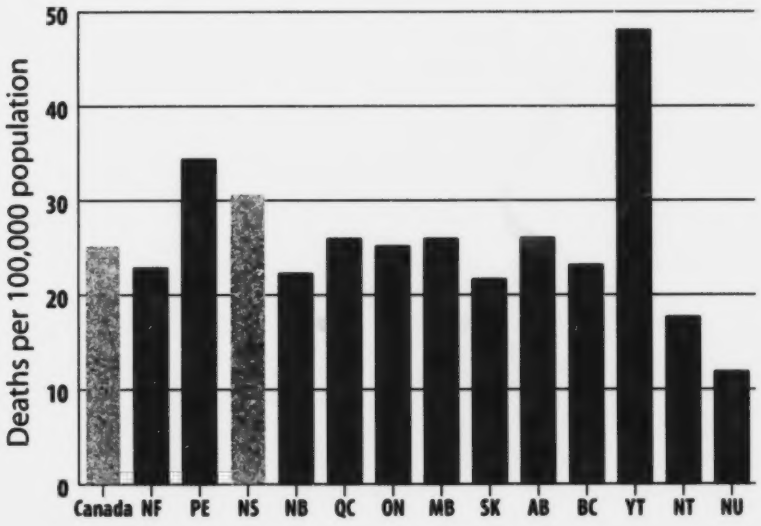
Definition

The reported number of deaths of individuals where the underlying cause of death is breast cancer, per 100,000 population, that would have occurred in the standard population if the actual age-specific rates observed in a given population had occurred in the standard population.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?" The rates shown therefore do not cite the actual number of observed cases, but the numbers of expected cases in the standard population.

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized Breast Cancer Mortality Rate
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics and Demography Division; ISQ.

Significance – Rationale and Notes for Interpretation

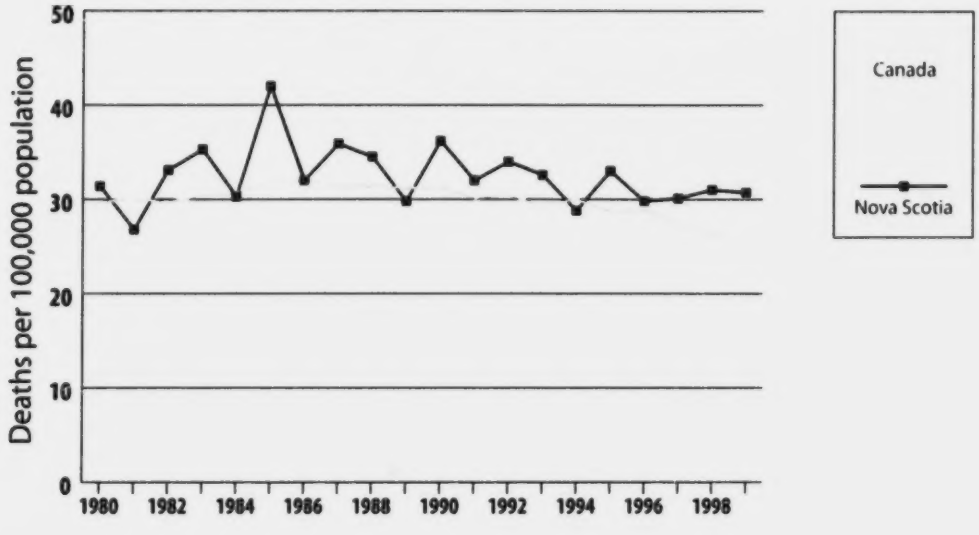
Age-standardized cancer or AMI or stroke death rate trends may indicate long-term success in reducing deaths from these diseases, compared with other provinces and countries. Lower death rates indicate success in cancer or cardio-vascular disease prevention, detection, and treatment.

Technical Specifications

Calculation: The age-standardized rate for each cancer site female breast (ICD-9 174), is calculated by multiplying each observed age-specific death rate by the standard population in the corresponding age-group, summing the results, multiplying the sum by 100,000 and then dividing the product by the total standard population. The 1991 Canadian population is used as the standard population.

Source: Statistics Canada, Vital Statistics, and Demography Division; ISQ

Age Standardized Breast Cancer Mortality Rate
Nova Scotia vs Canada, 1980 - 1999



Source: Statistics Canada, Vital Statistics and Demography Division; ISQ

Disclosures

Exclusions: Deaths of non-residents of Canada are excluded.

Limitations: N/A

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada. From 1979 to 1999, the underlying cause of death was coded using ICD-9; beginning with 2000, the underlying cause of death will be coded using ICD-10, thus introducing discontinuity to the trend data.

Age Standardized Acute Myocardial Infarction Mortality Rate

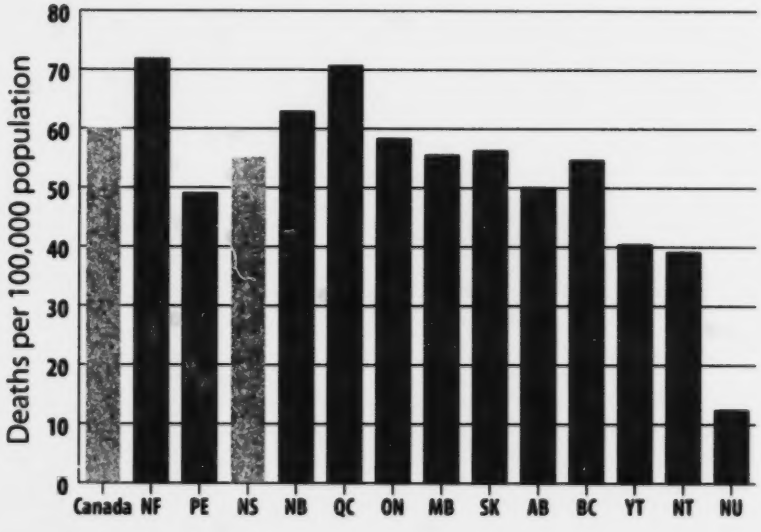
Definition

The reported number of deaths of individuals where the underlying cause of death is acute myocardial infarction, per 100,000 population, that would have occurred in the standard population if the actual age-specific rates observed in a given population had occurred in the standard population.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?" The rates shown therefore do not cite the actual number of observed cases, but the numbers of expected cases in the standard population.

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized Acute Myocardial Infarction Mortality Rate
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics and Demography Division; ISQ.

48 Significance – Rationale and Notes for Interpretation

Age-standardized cancer or AMI or stroke death rate trends may indicate long-term success in reducing deaths from these diseases, compared with other provinces and countries. Lower death rates indicate success in cancer or cardio-vascular disease prevention, detection, and treatment.

Technical Specifications

Calculation: The age-standardized rate for acute myocardial infarction (ICD-9 410) is calculated by multiplying each observed age-specific death rate by the standard population in the corresponding age-group, summing the results, multiplying the sum by 100,000 and then dividing the product by the total standard population. The 1991 Canadian population is used as the standard population.

Source: Statistics Canada, Vital Statistics, and Demography Division; ISQ

Age Standardized Acute Myocardial Infarction Mortality Rate
Nova Scotia vs Canada, 1980 - 1999

Source: Statistics Canada, Vital Statistics and Demography Division, ISQ.

Disclosures

Exclusions: Deaths of non-residents of Canada are excluded. ICD-9 or ICD-9-CM most responsible diagnosis code of 410.

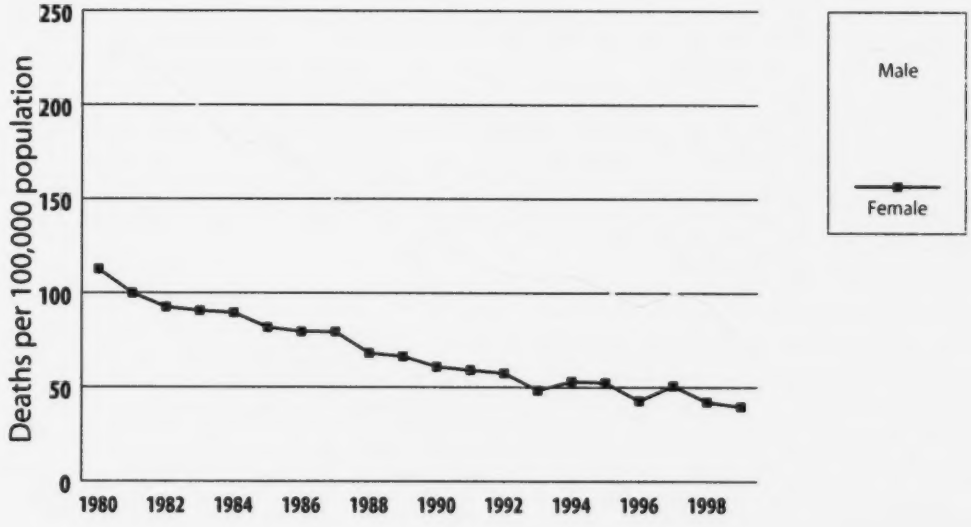
Limitations: N/A

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada. From 1979 to 1999, the underlying cause of death was coded using ICD-9; beginning with 2000, the underlying cause of death will be coded using ICD-10, thus introducing discontinuity to the trend data.

Age Standardized Acute Myocardial Infarction Mortality Rate
Nova Scotia by Sex, 1980 - 1999



Source: Statistics Canada, Vital Statistics and Demography Division.

50 Age Standardized All Stroke Mortality Rate

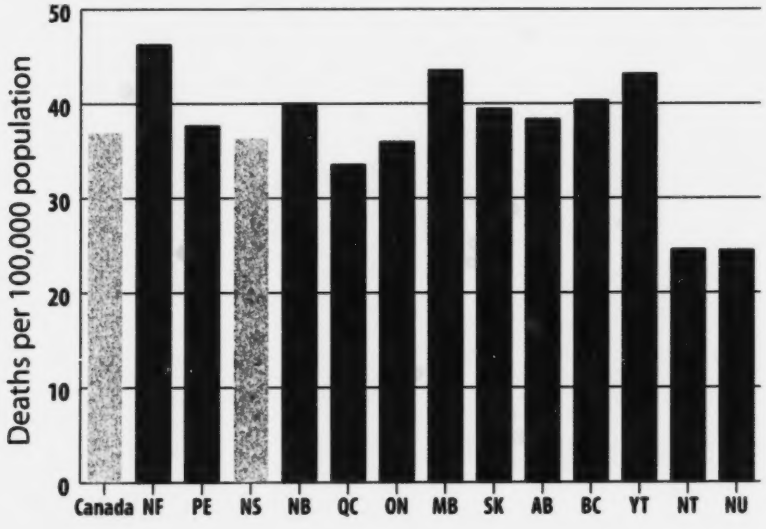
Definition

The reported number of deaths of individuals where the underlying cause of death is all stroke, per 100,000 population, that would have occurred in the standard population if the actual age-specific rates observed in a given population had occurred in the standard population.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?" The rates shown therefore do not cite the actual number of observed cases, but the numbers of expected cases in the standard population.

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized All Stroke Mortality Rate
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics and Demography Division; ISQ

Significance – Rationale and Notes for Interpretation

Age-standardized cancer or AMI or stroke death rate trends may indicate long-term success in reducing deaths from these diseases, compared with other provinces and countries. Lower death rates indicate success in cancer or cardio-vascular disease prevention, detection, and treatment.

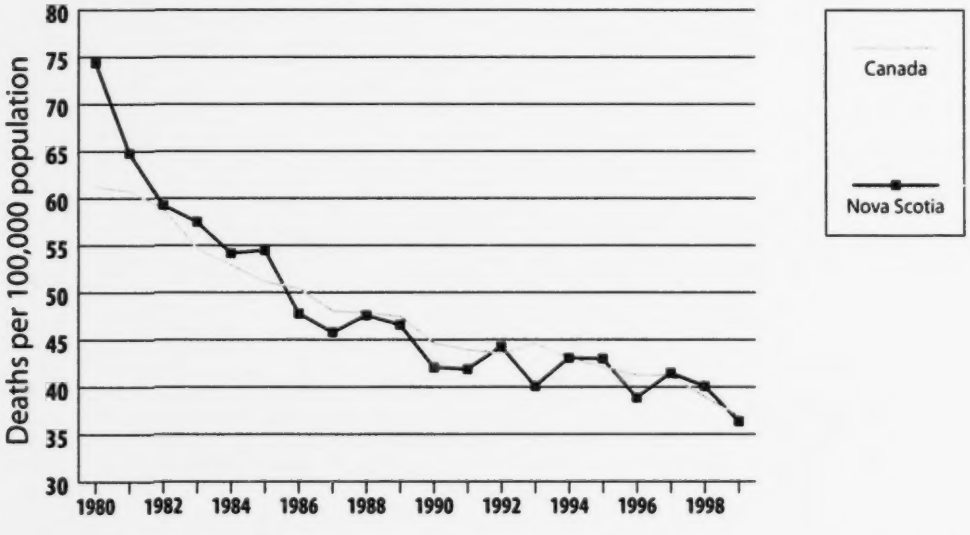
Technical Specifications

Calculation: The age-standardized rate all strokes (ICD-9 430-432, 434, 436) is calculated by multiplying each observed age-specific death rate by the standard population in the corresponding age-group, summing the results, multiplying the sum by 100,000 and then dividing the product by the total standard population. The 1991 Canadian population is used as the standard population.

The following ICD-9 codes are included: 430 (subarachnoid haemorrhage); 431 (intracerebral haemorrhage); 432 (other and unspecified intracranial haemorrhage); 434 (occlusion of cerebral arteries); 436 (acute, but ill-defined cerebrovascular disease).

Source: Statistics Canada, Vital Statistics, and Demography Division; ISQ

Age Standardized All Stroke Mortality Rate
Nova Scotia vs Canada, 1980 - 1999



Source: Statistics Canada, Vital Statistics and Demography Division; ISQ.

52 Disclosures

Exclusions: Deaths of non-residents of Canada are excluded.

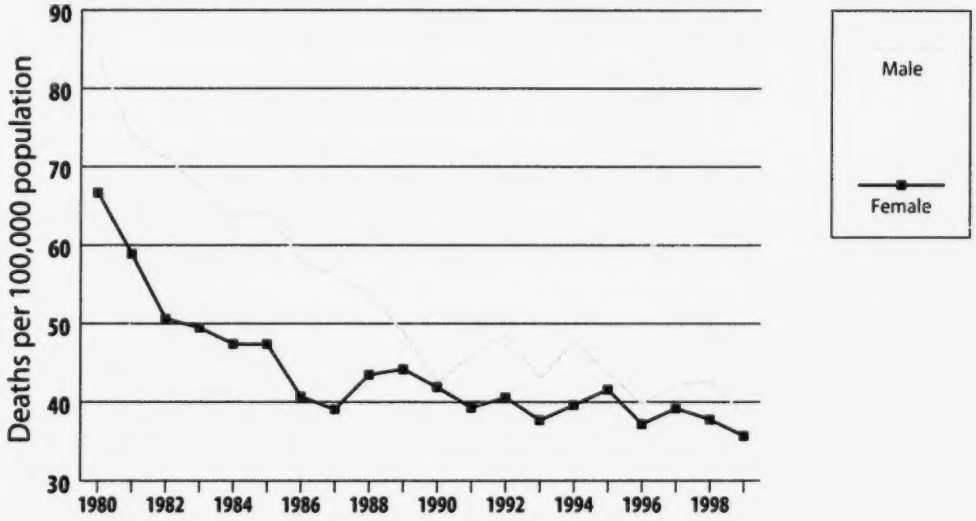
Limitations: N/A

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada. From 1979 to 1999, the underlying cause of death was coded using ICD-9; beginning with 2000, the underlying cause of death will be coded using ICD-10, thus introducing discontinuity to the trend data.

Age Standardized All Stroke Mortality Rate
Nova Scotia by Sex, 1980 - 1999



Source: Statistics Canada, Vital Statistics and Demography Division.

Five Year Age Standardized Colorectal Cancer Survival Rate

Definition

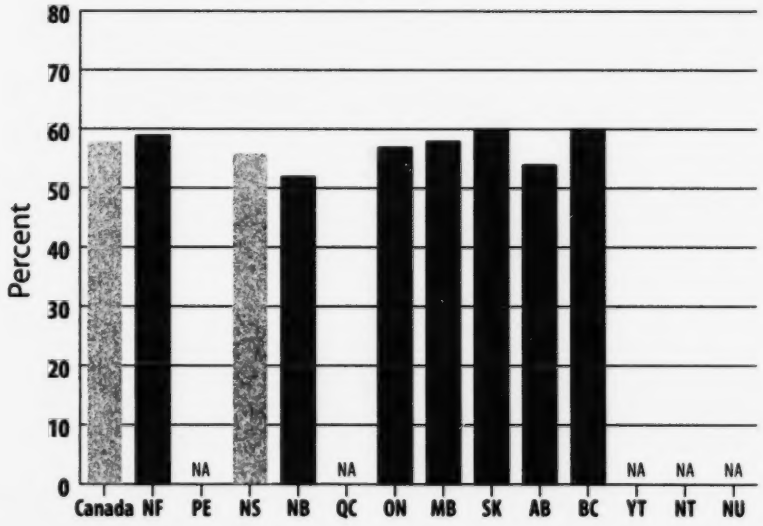
The ratio of the observed survival in the group of cancer patients under study five years after diagnosis and the survival that would have been expected had they been subject only to the mortality rates of the general population similar in characteristics such as age, sex, and geographic place of residence.

A relative survival rate of less than 100% implies that the cohort survived for less time than would be expected for the general population. A relative survival of 100% implies that survival in the cohort is no different from that in the general population. Age-standardization controls for a bias that may be introduced by comparing relative survival estimates amongst provinces with different case age distributions.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?" The rates shown therefore do not cite the actual number of observed cases, but the numbers of expected cases in the standard population.

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized Five-Year Relative Colorectal Cancer Survival Rates Canada and Provinces, 1997



Source: Statistics Canada, Canadian Cancer Registry, Canadian National Mortality Database.
Refers to patients diagnosed in 1992.

54 Significance – Rationale and Notes for Interpretation

Relative survival is the most widely used method for analyzing the survival of cancer patients in population studies. It reflects the added likelihood of mortality of those diagnosed with cancer.

Age-standardization controls for a bias that may be introduced by comparing relative survival estimates amongst provinces with different case age distributions.

The relative survival rate is influenced by two distinct groups of factors: (1) the severity (stage) of the cancer at the time of diagnosis, and (2) the effectiveness of cancer treatment after diagnosis. While the indicator does not shed light on the relative importance of these two kinds of factors, from the viewpoint of interpreting this indicator, these two factors work in the same direction. For example, an improvement in screening would result in cancers being detected at an earlier stage, where treatments are generally more successful, resulting in better observed survival. And if there had not been a significant change in screening, better-observed survival would indicate more effective and successful cancer treatment after diagnosis. This interpretation issue is currently being addressed by the addition of staging data to the cancer registry systems. Cancer staging data indicates how advanced (serious) the cancer is at the time of diagnosis.

Prostate, breast, lung and colorectal cancer are reported on because they represent the four most common cancer sites. In particular, lung cancer relative survival rates are reported to inform the public of the poor prognosis of this cancer. The fact that health system interventions with lung cancer are not very successful underscores the need to emphasize preventive strategies.

It should be noted that variations in the use of prostate cancer screening (prostate specific antigen or PSA testing) have affected incidence rates of prostate cancer over the past ten years, and this may have an impact on survival rates. At the same time, however, available survival data are from 1992, just at the beginning of widespread PSA testing.

Technical Specifications

The maximum likelihood method of Estève et al. (1990) Age-standardized rates for a given cancer were calculated by weighting age-specific rates to the age distribution of all eligible patients who were diagnosed with that cancer.*

Source: Statistics Canada, Canadian Cancer Registry, Canadian National Mortality Data Base, and Canadian and provincial life tables (1990-1992)

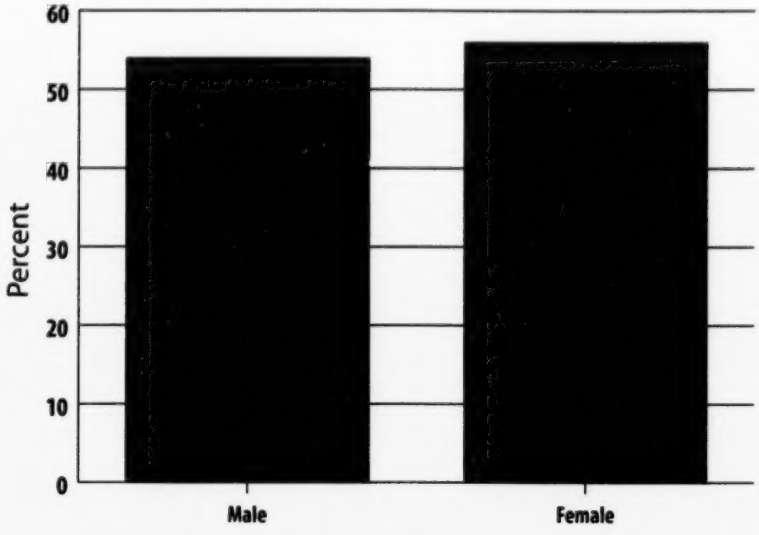
Disclosures

Exclusions: Restricted to cases diagnosed in 1992 that were the first primary cancer for the individual. Subjects with an unknown year of birth or death; subjects younger than 15 or older than 99 years of age at diagnosis; subjects diagnosed through autopsy or death certificate only

Limitations: Quebec, PEI and Territories data are not included in Canada rate Provincial variations in collection data may impact on the comparability of provincial statistics.

Departures from PIRC Requirements:

Age Standardized Five-Year Relative Colorectal Cancer Survival Rates, Nova Scotia by Sex, 1997



Source: Statistics Canada, Canadian Cancer Registry, Canadian National Mortality Database.
Refers to patients diagnosed in 1992.

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

56 Five Year Age Standardized Lung Cancer Survival Rate

Definition

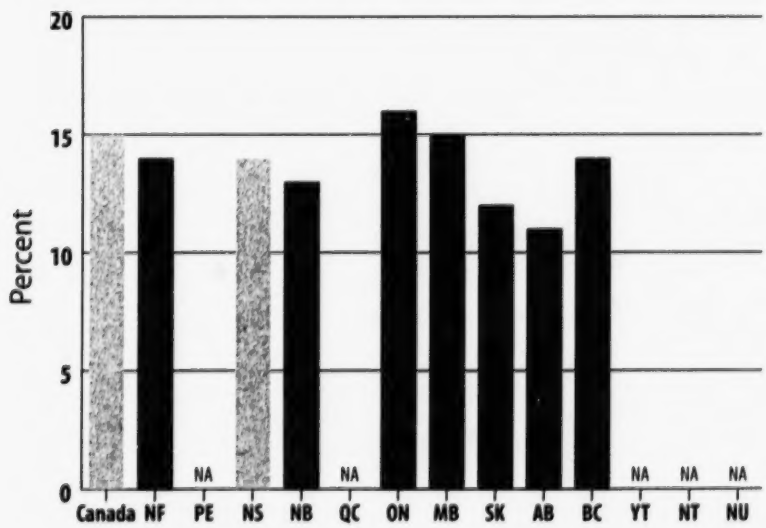
The ratio of the observed survival in the group of cancer patients under study five years after diagnosis and the survival that would have been expected had they been subject only to the mortality rates of the general population similar in characteristics such as age, sex, and geographic place of residence.

A relative survival rate of less than 100% implies that the cohort survived for less time than would be expected for the general population. A relative survival of 100% implies that survival in the cohort is no different from that in the general population. Age-standardization controls for a bias that may be introduced by comparing relative survival estimates amongst provinces with different case age distributions.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?" The rates shown therefore do not cite the actual number of observed cases, but the numbers of expected cases in the standard population.

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized Five-Year Relative Lung Cancer Survival Rates Canada and Provinces, 1997



Source: Statistics Canada, Canadian Cancer Registry, Canadian National Mortality Database.
Refers to patients diagnosed in 1992.

Significance – Rationale and Notes for Interpretation

Relative survival is the most widely used method for analysing the survival of cancer patients in population studies. It reflects the added likelihood of mortality of those diagnosed with cancer.

Age-standardization controls for a bias that may be introduced by comparing relative survival estimates amongst provinces with different case age distributions.

The relative survival rate is influenced by two distinct groups of factors: (1) the severity (stage) of the cancer at the time of diagnosis, and (2) the effectiveness of cancer treatment after diagnosis. While the indicator does not shed light on the relative importance of these two kinds of factors, from the viewpoint of interpreting this indicator, these two factors work in the same direction. For example, an improvement in screening would result in cancers being detected at an earlier stage, where treatments are generally more successful, resulting in better observed survival. And if there had not been a significant change in screening, better-observed survival would indicate more effective and successful cancer treatment after diagnosis. This interpretation issue is currently being addressed by the addition of staging data to the cancer registry systems. Cancer staging data indicates how advanced (serious) the cancer is at the time of diagnosis.

Prostate, breast, lung and colorectal cancer are reported on because they represent the four most common cancer sites. In particular, lung cancer relative survival rates are reported to inform the public of the poor prognosis of this cancer. The fact that health system interventions with lung cancer are not very successful underscores the need to emphasize preventive strategies.

It should be noted that variations in the use of prostate cancer screening (prostate specific antigen or PSA testing) have affected incidence rates of prostate cancer over the past ten years, and this may have an impact on survival rates. At the same time, however, available survival data are from 1992, just at the beginning of widespread PSA testing.

Technical Specifications

The maximum likelihood method of Estève et al. (1990) Age-standardized rates for a given cancer were calculated by weighting age-specific rates to the age distribution of all eligible patients who were diagnosed with that cancer.[7]

Source: Statistics Canada, Canadian Cancer Registry, Canadian National Mortality Data Base, and Canadian and provincial life tables (1990-1992)

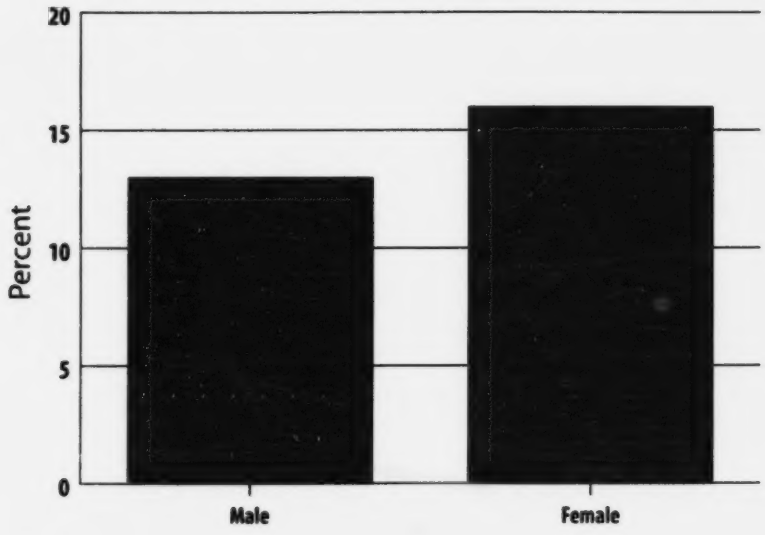
Disclosures

Exclusions: Restricted to cases diagnosed in 1992 that were the first primary cancer for the individual. Subjects with an unknown year of birth or death; subjects younger than 15 or older than 99 years of age at diagnosis; subjects diagnosed through autopsy or death certificate only

Limitations: Quebec, PEI and Territories data are not included in Canada rate Provincial variations in collection data may impact on the comparability of provincial statistics.

Departures from PIRC Requirements: None.

Age Standardized Five-Year Relative Lung Cancer Survival Rates Nova Scotia by Sex, 1997



Source: Statistics Canada, Canadian Cancer Registry, Canadian National Mortality Database.
Refers to patients diagnosed in 1992.

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

Five Year Age Standardized Prostate Cancer and Breast Cancer Survival Rates

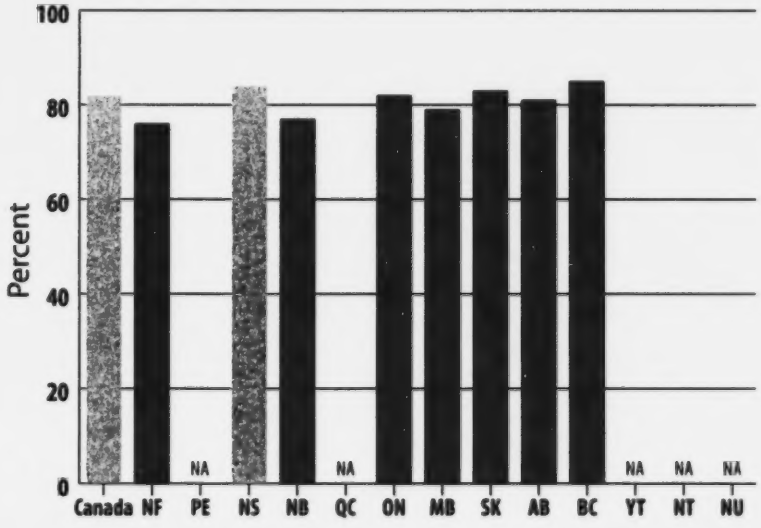
Definition

The ratio of the observed survival in the group of cancer patients under study five years after diagnosis and the survival that would have been expected had they been subject only to the mortality rates of the general population similar in characteristics such as age, sex, and geographic place of residence.

A relative survival rate of less than 100% implies that the cohort survived for less time than would be expected for the general population. A relative survival of 100% implies that survival in the cohort is no different from that in the general population. Age-standardization controls for a bias that may be introduced by comparing relative survival estimates amongst provinces with different case age distributions.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?" The rates shown therefore do not cite the actual number of observed cases, but the numbers of expected cases in the standard population.

Age Standardized Five-Year Relative Breast Cancer Survival Rate Canada and Provinces, 1997



Source: Statistics Canada, Canadian Cancer Registry, Canadian National Mortality Database.
Refers to patients diagnosed in 1992.

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Significance – Rationale and Notes for Interpretation

Relative survival is the most widely used method for analysing the survival of cancer patients in population studies. It reflects the added likelihood of mortality of those diagnosed with cancer.

Age-standardization controls for a bias that may be introduced by comparing relative survival estimates amongst provinces with different case age distributions.

The relative survival rate is influenced by two distinct groups of factors: (1) the severity (stage) of the cancer at the time of diagnosis, and (2) the effectiveness of cancer treatment after diagnosis. While the indicator does not shed light on the relative importance of these two kinds of factors, from the viewpoint of interpreting this indicator, these two factors work in the same direction. For example, an improvement in screening would result in cancers being detected at an earlier stage, where treatments are generally more successful, resulting in better observed survival. And if there had not been a significant change in screening, better-observed survival would indicate more effective and successful cancer treatment after diagnosis. This interpretation issue is currently being addressed by the addition of staging data to the cancer registry systems. Cancer staging data indicates how advanced (serious) the cancer is at the time of diagnosis.

Prostate, breast, lung and colorectal cancer are reported on because they represent the four most common cancer sites. In particular, lung cancer relative survival rates are reported to inform the public of the poor prognosis of this cancer. The fact that health system interventions with lung cancer are not very successful underscores the need to emphasize preventive strategies.

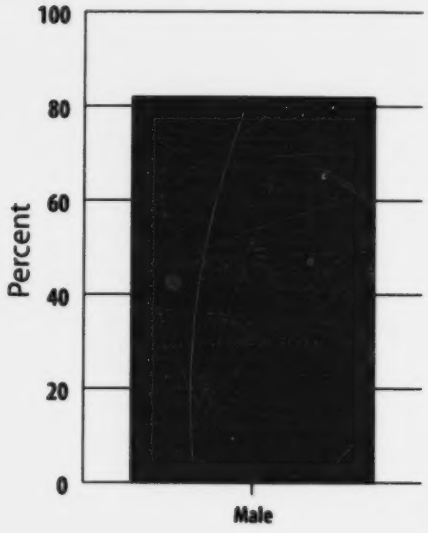
It should be noted that variations in the use of prostate cancer screening (prostate specific antigen or PSA testing) have affected incidence rates of prostate cancer over the past ten years, and this may have an impact on survival rates. At the same time, however, available survival data are from 1992, just at the beginning of widespread PSA testing.

Technical Specifications

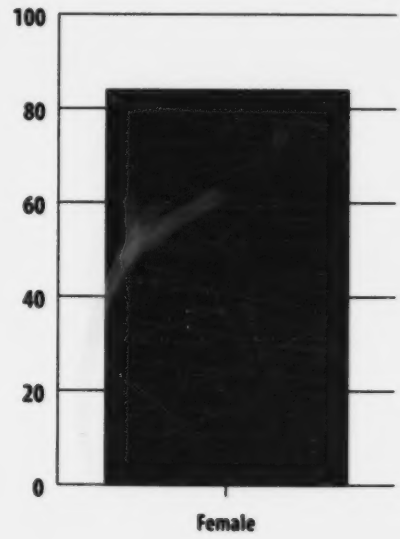
The maximum likelihood method of Estève et al. (1990) Age-standardized rates for a given cancer were calculated by weighting age-specific rates to the age distribution of all eligible patients who were diagnosed with that cancer.[x]

Source: Statistics Canada, Canadian Cancer Registry, Canadian National Mortality Data Base, and Canadian and provincial life tables (1990-1992)

Age Standardized Five-Year Relative Prostate Cancer Survival Rates, Nova Scotia Males, 1997

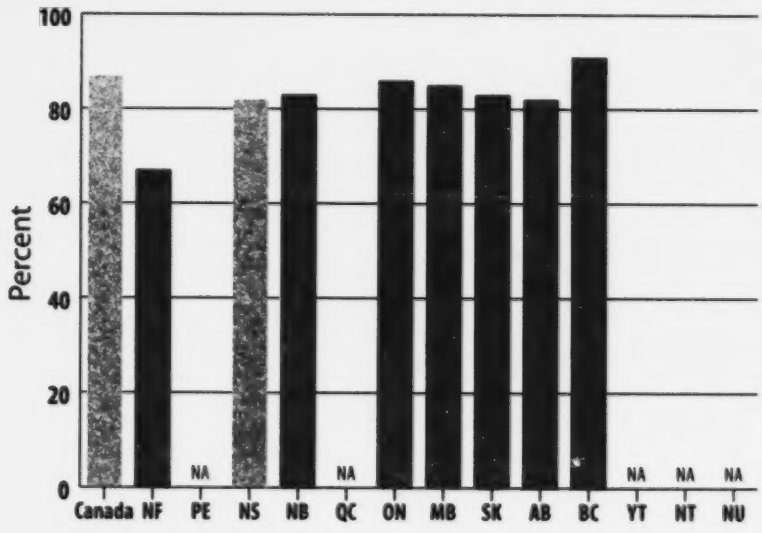


Age Standardized Five-Year Relative Breast Cancer Survival Rates Nova Scotia Females, 1997



Source: Statistics Canada, Canadian Cancer Registry, Canadian National Mortality Database.
Refers to patients diagnosed in 1992.

Age Standardized Five-Year Relative Prostate Cancer Survival Rate, Canada and Provinces, 1997



Source: Statistics Canada, Canadian Cancer Registry, Canadian National Mortality Database.
Refers to patients diagnosed in 1992.

62 Disclosures

Exclusions: Restricted to cases diagnosed in 1992 that were the first primary cancer for the individual. Subjects with an unknown year of birth or death; subjects younger than 15 or older than 99 years of age at diagnosis; subjects diagnosed through autopsy or death certificate only

Limitations: Quebec, PEI and Territories data are not included in Canada rate Provincial variations in collection data may impact on the comparability of provincial statistics.

Departures from PIRC Requirements:

Plans for Future Reporting

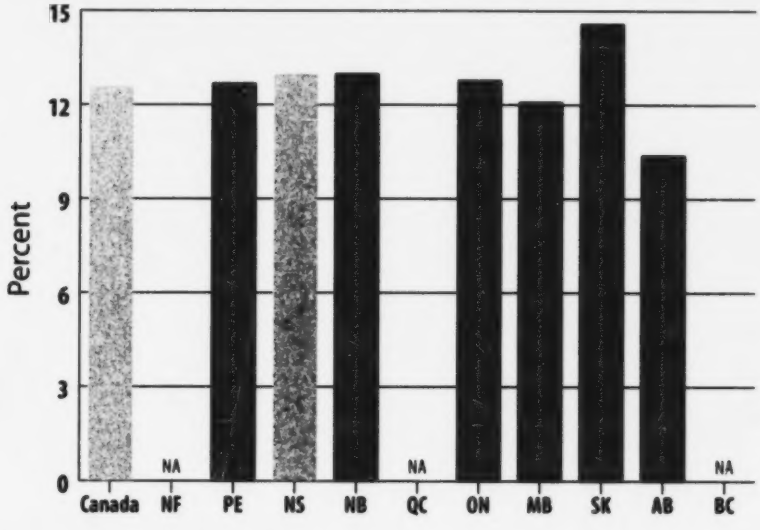
This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

30-Day Acute Myocardial Infarction In Hospital Mortality Rate

Definition

The risk adjusted rate of all cause in-hospital death occurring within 30 days of first admission to an acute care hospital with a diagnosis of Acute Myocardial Infarction (AMI).

Risk-Adjusted 30-Day In-hospital Acute Myocardial Infarction Mortality Rate Canada and Provinces, Pooled Average 1997 - 1999



Source: Hospital Morbidity Database, CIHI.
Canadian average based only on provinces where data were available.

Significance – Rationale and Notes for Interpretation

Acute myocardial infarction (AMI) is one of the leading causes of death in Canada. There are effective strategies for treating and preventing AMI. Thirty-day AMI inpatient mortality provides information relevant to some aspects of treatment. A lower risk-adjusted mortality rate following AMI may be related to quality of care. The 30-day in-hospital mortality rate is highly correlated with total mortality during this period, following AMI. Reporting measures of 365-day survival and age-specific mortality rates help to provide a broader perspective on AMI treatment and prevention.

To enable comparison across regions, a statistical model was used to adjust for differences in age, sex and co-morbidity

Numerator: number of deaths from all causes that occur in-hospital within 30 days of first admission for an AMI among patients who meet the conditions specified for the denominator

Denominator: number of patients who were admitted to an acute care hospital in a given period with a most responsible diagnosis of AMI and who had not been admitted to an acute care hospital with the same most responsible diagnosis within one year prior to the index admission

Inclusion Criteria:

1. Most responsible diagnosis of Acute Myocardial Infarction (ICD-9 410)
2. Admission between April 1, and March 1 of the following year (period of case selection ends March 1 to allow for 30 days of follow-up)
3. Age at admission between 20 and 105 years
4. Gender recorded as male or female
5. Admission to an acute care institution
6. Length of stay of 3 or more consecutive days

Exclusion Criteria:

7. Records containing an invalid Health Card Number
8. Records indicating that a provincial resident was seen in a facility outside of the province (to prevent duplicate counts)
9. Patients who had an AMI admission within one year prior to the date of the index episode
10. Records where AMI is coded as a complication

Diagnosis Code: ICD-9 or ICD-9-CM most responsible diagnosis code of 410

A logistic regression model is fitted with age, gender, and select comorbid conditions as independent variables. Coefficients derived from the logistic model are used to calculate the probability of in-hospital death following AMI for each case (episode). The expected in-hospital death rate of a province is the sum of these case probabilities divided by the total number of cases. The risk adjusted mortality rate (RAMR) is calculated by dividing the observed in-hospital death rate of each province by the expected in-hospital death rate of the province and multiplying by the average in-hospital death rate. A 95 percent confidence interval for the RAMR is also calculated."

Source: Hospital Morbidity Database, Canadian Institute for Health Information

Disclosures

Exclusions: Patients less than 20 years of age or greater than 105 years of age; patients discharged alive with a total length of stay less than 3 days; transfers from another acute care facility; records where AMI is coded as a complication; records containing an invalid Health Card number; records which are out of jurisdiction, patients who had an AMI admission within one year prior to the date of the index episode.

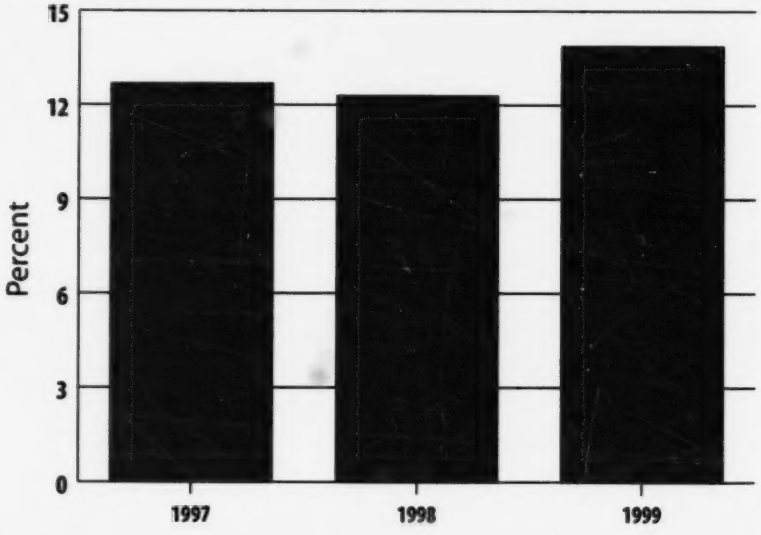
Limitations: Data have not currently been calculated for British Columbia, Newfoundland and Quebec due to reporting differences. The Canada data point is based only on those provinces where data were available.

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by the Canadian Institute for Health Information.

Risk-Adjusted 30-Day In-hospital Acute Myocardial Infarction Mortality Rate, Nova Scotia, 1997 - 1999



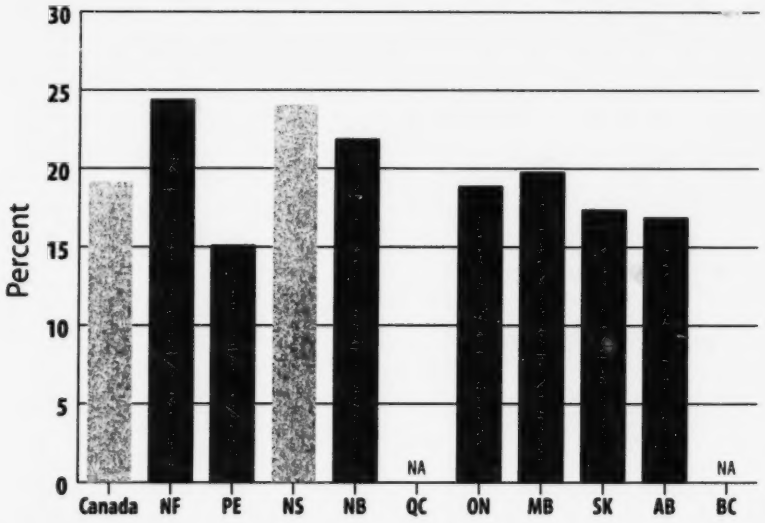
Source: Hospital Morbidity Database, CIHI.

30-Day Stroke In Hospital Mortality Rate

Definition

The risk adjusted rate of all cause in-hospital death occurring within 30 days of admission to an acute care hospital with a diagnosis of stroke.

Risk-Adjusted 30-Day In-hospital Stroke Mortality Rate
Canada and Provinces, Pooled Average 1997 - 1999



Source: Hospital Morbidity Database, CIHI.
Canadian average based only on provinces where data were available.

Significance – Rationale and Notes for Interpretation

Stroke is an important cause of death and disability in the Canadian population. The risk-adjusted mortality rate is an important measure of variations in mortality, which may be due to a number of factors, including emergency treatments, quality of care in hospitals, primary care and prevention, or socioeconomic factors, for example. The mortality rate is an important indicator in comparing stroke outcomes between jurisdictions, and serial measurements may reflect advances in prevention and treatment and other factors.

Technical Specifications

Numerator: The number of deaths from all causes that occur in-hospital within 30 days of first admission for stroke who satisfy the conditions listed for the denominator

Denominator: Number of patients with a diagnosis of stroke admitted to acute care hospitals in the defined time period, who have no previous admission(s) to an acute care hospital for stroke in the year prior to the index admission.

Inclusion Criteria:

1. Most responsible diagnosis of stroke (ICD-9 430 (subarachnoid haemorrhage), 431 (intracerebral haemorrhage), 432 (other and unspecified intracranial haemorrhage), 434 (occlusion of cerebral arteries) or 436 (acute, but ill-defined cerebrovascular disease)
2. Admission between April 1, and March 1 of the following year (period of case selection ends March 1 to allow for 30 days of follow-up)
3. Age at admission between 20 and 105 years
4. Gender recorded as male or female
5. Admission to an acute care institution

Exclusion Criteria:

6. Records containing an invalid Health Card Number
7. Records indicating that a provincial resident was seen in a facility outside of the province (to prevent duplicate counts)
8. Patients who had a stroke admission within one year prior to the date of the index episode
9. Records where stroke is coded as a complication

Diagnosis Code: The following ICD-9 codes are included: 430 (subarachnoid haemorrhage); 431 (intracerebral haemorrhage); 432 (other and unspecified intracranial haemorrhage); 434 (occlusion of cerebral arteries); 436 (acute, but ill-defined cerebrovascular disease).

Calculation(s): A logistic regression model is fitted with age, gender, and select comorbid conditions as independent variables. Coefficients derived from the logistic model are used to calculate the probability of in-hospital death following stroke for each case (episode). The expected in-hospital death rate of a province is the sum of these case probabilities divided by the total number of cases. The risk adjusted mortality rate (RAMR) is calculated by dividing the observed in-hospital death rate of each province by the expected in-hospital death rate of the province and multiplying by the average in-hospital death rate. A 95 percent confidence interval for the RAMR is also calculated.

Source: Hospital Morbidity Database, Canadian Institute for Health Information

Disclosures

Exclusions: Patients under 20 and over 105 years of age, records containing an invalid Health Card Number, records indicating that a provincial resident was seen in a facility outside of the province (to prevent duplicate counts), patients who had a stroke admission within one year prior to the date of the index episode, records where stroke is coded as a complication.

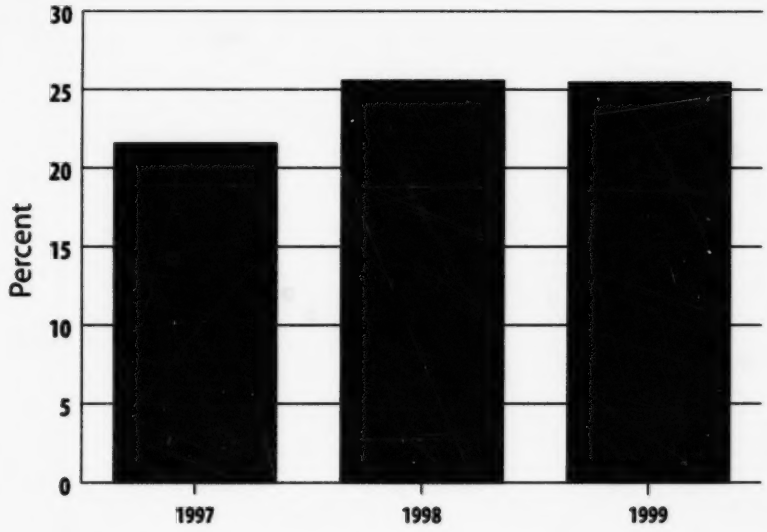
Limitations: Data have not currently been calculated for British Columbia and Quebec due to reporting differences. The Canada data point is based only on those provinces where data were available.

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by the Canadian Institute for Health Information.

Risk-Adjusted 30-Day In-hospital Stroke Mortality Rate
Nova Scotia, 1997 - 1999



Source: Hospital Morbidity Database, CIHI.

Age Standardized 365-Day Acute Myocardial Infarction Survival Rate

Definition

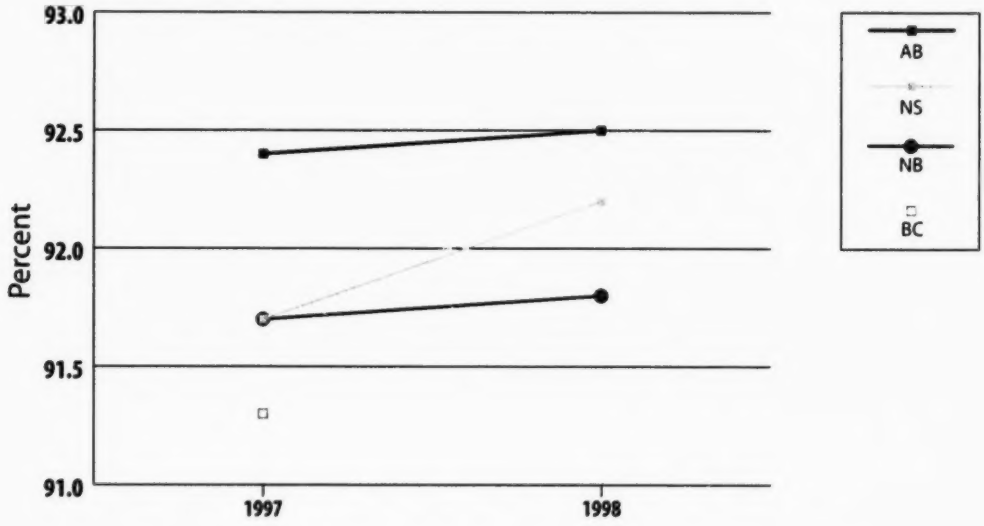
The net survival rate for individuals with a reported incident case of AMI or stroke is estimated using the cause-specific survival rate. In the case of AMI, survival is at least 365 days after initial admission to hospital, while for stroke, survival is for at least 180 days. The net survival rate measures mortality due to AMI or stroke, i.e., survival where the only possible underlying cause of death is the disease in question.

A relative survival rate of less than 100% implies that the cohort survived for less time than would be expected for the general population. A relative survival of 100% implies that survival in the cohort is no different from that in the general population. Age-standardization controls for a bias that may be introduced by comparing relative survival

estimates amongst provinces with different case age distributions.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?"

Age Standardized 365-day Acute Myocardial Infarction Survival Rate
Provinces, 1997 - 1998



Source: Jurisdictional administrative databases with sufficient linkage information; Statistics Canada person-oriented health information; Hospital Morbidity Discharge Abstract Database (CIHI); Vital Statistics files (Statistics Canada).

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Significance – Rationale and Notes for Interpretation

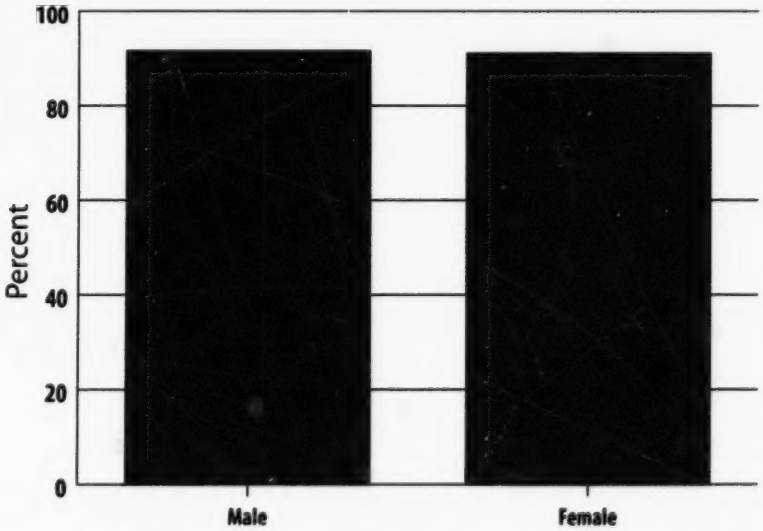
Cardiovascular disease is the major cause of death in Canada. Cardiovascular diseases caused 36% of all deaths in 1998, with AMI accounting for 10% and all strokes, about 7%. These diseases exact high personal, community, and health care costs.

In Canada, as in many countries, there has been a decades-long decline in mortality rates for AMI and stroke. It is not known how much of this decline is due to a change in the underlying incidence of these diseases, which would reflect changes in lifestyle and risk factors, or to an improvement in survival brought on by improved treatment.

Over 10 years ago, the Nova Scotia-Saskatchewan Epidemiology Group showed incidence and survival can be determined by creating person-oriented health information from administrative data on the health care encounters of individual patients.

The choice of 365- and 180-day follow-up for AMI and stroke respectively is somewhat arbitrary. These periods are long enough to include fatalities that occur almost immediately after the event and over a longer period. They therefore reflect not only trends in the severity of the AMI and stroke themselves but also reflect both immediate emergency care and longer-term health care follow-up.

Age Standardized 365-day Acute Myocardial Infarction Survival Rate, Nova Scotia by Sex, 1997



Source: Jurisdictional administrative databases with sufficient linkage information, Statistics Canada person-oriented health information, Discharge Abstract Database/Hospital Morbidity Database (CIHI); Vital Statistics (Statistics Canada).

Technical Specifications

AMI – ICD9 410; Survival rates are calculated using the Kaplan-Meier method, with persons whose underlying cause of death was not the disease of interest censored on the date of death. Date of incidence is assumed to be the date of admission for the initial hospitalization episode for the disease of interest. Subsequent episodes are ignored. The standard error is calculated using Greenwood's formula. Age-standardization is done by the direct method to the standard 1991 population, with the Greenwood standard error inflated to account for standardization.

Source: Jurisdictional administrative databases with sufficient linkage information; Statistics Canada person-oriented health information; Hospital Morbidity Discharge Abstract Database (Canadian Institute for Health Information); Vital Statistics files (Statistics Canada)

Disclosures

Exclusions: Non-residents; persons not admitted as in-patients; admissions outside the patient's province/territory of residence, records with invalid, missing, or un-linkable health insurance numbers; records with severe errors or invalid data that could not be reasonably imputed; provinces and territories with insufficient linkable incident cases of AMI and stroke; admissions in some types of hospitals in some jurisdictions; persons whose initial hospitalization episode did not occur in the calendar year of interest; persons suffering any prior AMI within three years or any stroke within one year of the initial hospitalization episode; persons whose initial hospitalization episode (not stay) for AMI is less than two days; persons under 20 years of age (under 45 years of age for age-standardized estimates); persons who were not diagnosed with the disease of interest in the first stay of an episode or whose diagnosis in the first stay was of a type that did not affect the length of stay.

Limitations: The data reflects only reported incidents of an AMI event. Reporting of data for non-acute care hospitals caries by jurisdiction and may place limitations on the comparability of the data and result in underreporting.

Departures from PIRC Requirements: Due to embargoed status of data, sex breakdowns were unavailable.

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada and the Canadian Institute for Health Information.

72 Age Standardized 180-Day Stroke Survival Rate

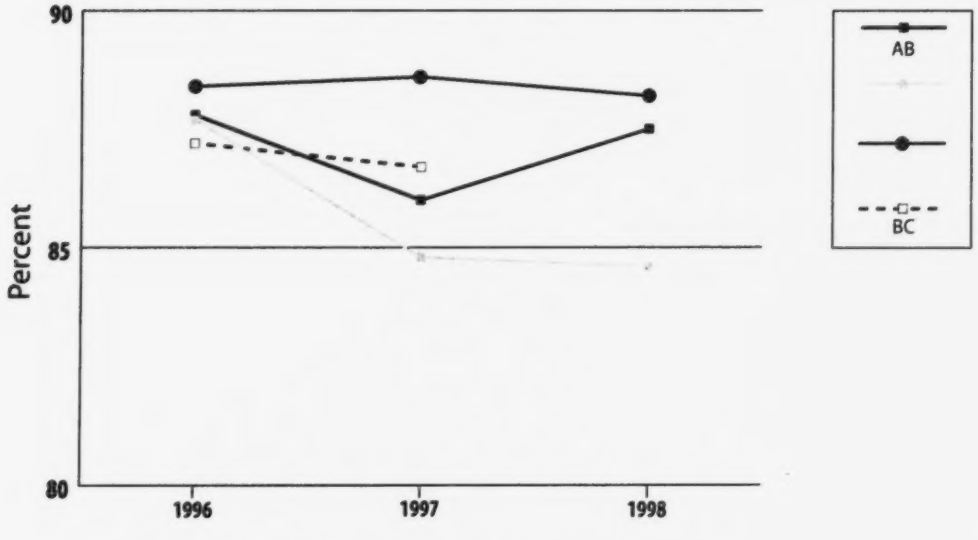
Definition

The net survival rate for individuals with a reported incident case of AMI or stroke is estimated using the cause-specific survival rate. In the case of AMI, survival is at least 365 days after initial admission to hospital, while for stroke, survival is for at least 180 days. The net survival rate measures mortality due to AMI or stroke, i.e., survival where the only possible underlying cause of death is the disease in question.

A relative survival rate of less than 100% implies that the cohort survived for less time than would be expected for the general population. A relative survival of 100% implies that survival in the cohort is no different from that in the general population. Age-standardization controls for a bias that may be introduced by comparing relative survival estimates amongst provinces with different case age distributions.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?"

Age Standardized 180-Day Stroke Survival Rate
Provinces, 1996 -1998



Source: Jurisdictional administrative databases with sufficient linkage information; Statistics Canada person-oriented health information; Hospital Morbidity Discharge Abstract Database (CIHI); Vital Statistics files (Statistics Canada).

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Significance – Rationale and Notes for Interpretation

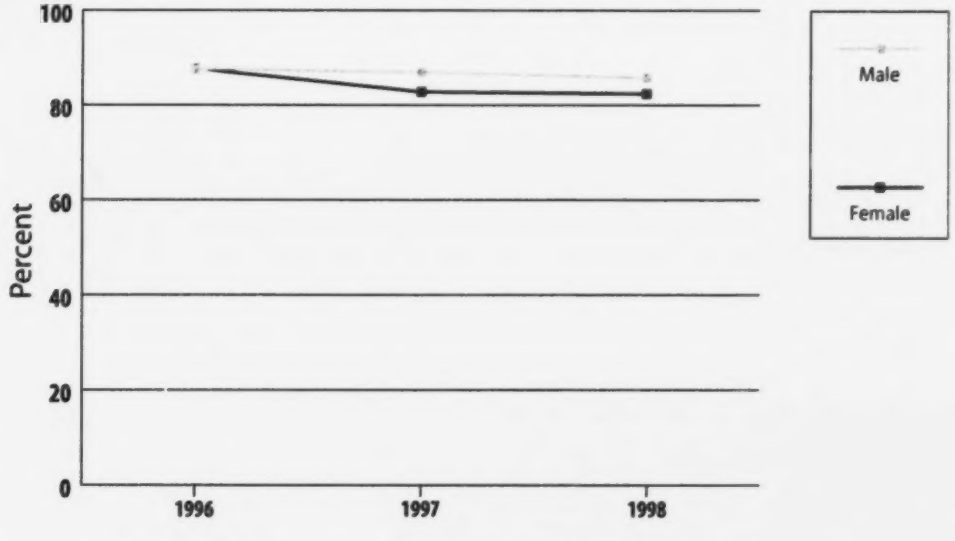
Cardiovascular disease is the major cause of death in Canada. Cardiovascular diseases caused 36% of all deaths in 1998, with AMI accounting for 10% and all strokes, about 7%. These diseases exact high personal, community, and health care costs.

In Canada, as in many countries, there has been a decades-long decline in mortality rates for AMI and stroke. It is not known how much of this decline is due to a change in the underlying incidence of these diseases, which would reflect changes in lifestyle and risk factors, or to an improvement in survival brought on by improved treatment.

Over 10 years ago, the Nova Scotia-Saskatchewan Epidemiology Group showed incidence and survival can be determined by creating person-oriented health information from administrative data on the health care encounters of individual patients.

The choice of 365- and 180-day follow-up for AMI and stroke respectively is somewhat arbitrary. These periods are long enough to include fatalities that occur almost immediately after the event and over a longer period. They therefore reflect not only trends in the severity of the AMI and stroke themselves but also reflect both immediate emergency care and longer-term health care follow-up.

Age Standardized 180-day Stroke Survival Rate
Nova Scotia by Sex, 1996 - 1998



Source: Jurisdictional administrative databases with sufficient linkage information, Statistics Canada person-oriented health information, Discharge Abstract Database/Hospital Morbidity Database (CIHI); Vital Statistics (Statistics Canada).

All Stroke – ICD9 430-432, 434, 436; Survival rates are calculated using the Kaplan-Meier method, with persons whose underlying cause of death was not the disease of interest censored on the date of death. Date of incidence is assumed to be the date of admission for the initial hospitalization episode for the disease of interest. Subsequent episodes are ignored. The standard error is calculated using Greenwood's formula. Age-standardization is done by the direct method to the standard 1991 population, with the Greenwood standard error inflated to account for standardization.

Source: Jurisdictional administrative databases with sufficient linkage information; Statistics Canada person-oriented health information; Hospital Morbidity Discharge Abstract Database (Canadian Institute for Health Information); Vital Statistics files (Statistics Canada).

Disclosures

Exclusions: Non-residents; persons not admitted as in-patients; admissions outside the patient's province/territory of residence, records with invalid, missing, or un-linkable health insurance numbers; records with severe errors or invalid data that could not be reasonably imputed; provinces and territories with insufficient linkable incident cases of AMI and stroke; admissions in some types of hospitals in some jurisdictions; persons whose initial hospitalization episode did not occur in the calendar year of interest; persons suffering any prior AMI within three years or any stroke within one year of the initial hospitalization episode; persons whose initial hospitalization episode (not stay) for AMI is less than two days; persons under 20 years of age (under 45 years of age for age-standardized estimates); persons who were not diagnosed with the disease of interest in the first stay of an episode or whose diagnosis in the first stay was of a type that did not affect the length of stay.

Limitations: Historical data availability will vary by jurisdiction. Reporting of data for "non acute care" hospitals varies by jurisdiction. In future years, the staged progression to ICD-10-CA and CCI will cause differences due to coding over a number of years and a break in time series.

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada and the Canadian Institute of Health Information.

Age Standardized Total Knee Replacement Rate

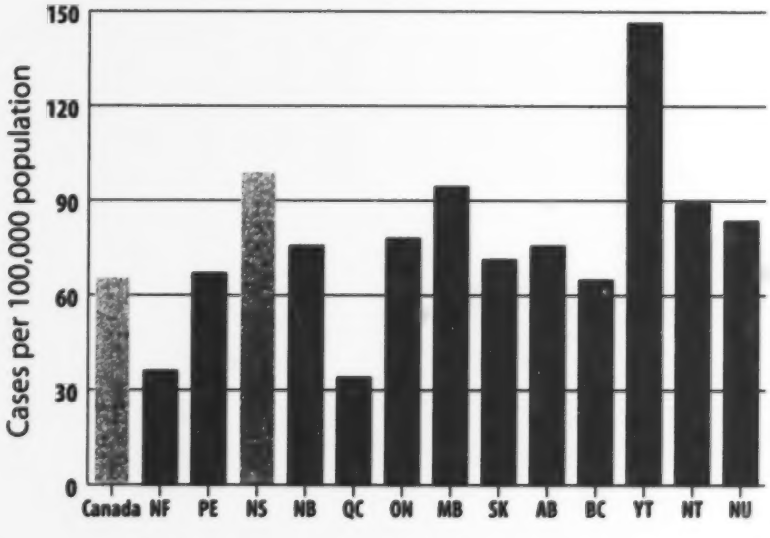
Definition

Age standardized rate of total unilateral or bilateral or bilateral knee replacement surgery performed on in-patients in acute care hospitals.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?" The rates shown therefore do not cite the actual number of observed cases, but the numbers of expected cases in the standard population.

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized Total Knee Replacement Rate
Canada and Provinces, 1999/2000



Source: Hospital Morbidity Database, CIHI, Canada Census, Statistics Canada; ISQ.

76 Significance – Rationale and Notes for Interpretation

The intended outcome of most elective surgery is improved health-related quality of life. Recent research in BC specifically examined the appropriateness and health-related outcomes of several types of elective surgery; over 6200 surgical episodes were assessed. Results demonstrated that health-related quality of life improved substantially for the great majority of those receiving one of six different elective procedures.

Technical Specifications

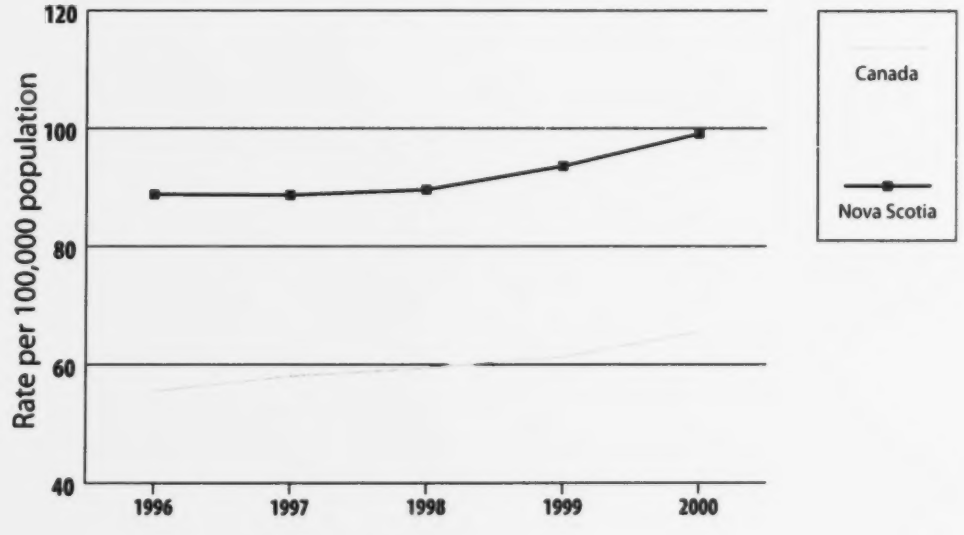
Numerator: number in-patient separations from acute care hospitals (discharges, sign-outs, and deaths) where the patient received a total knee replacement during the year, by age and gender categories

Denominator: population by age and gender categories, either from census or census estimates, for the year

Procedure Code(s): CCP code of 93.41 or ICD-9-CM code of 81.54 or 81.55 in any procedure field

Source: Hospital Morbidity Database, Canadian Institute for Health Information. Canada Census, Statistics Canada; ISQ

Age Standardized Total Knee Replacement Rate
Nova Scotia vs Canada, 1996 - 2000



Source: Hospital Morbidity Database, CIHI, Canada Census, Statistics Canada; ISQ.

Disclosures

Exclusions: Patients not treated as inpatients in acute care hospitals and those who received their surgery prior to admission.

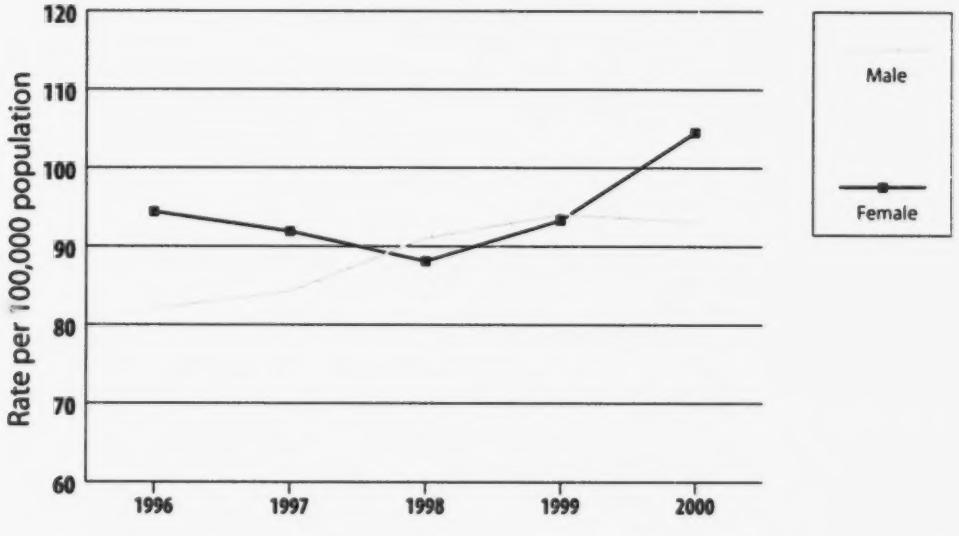
Limitations: Due to Limitations of existing databases, intervention rates for joint replacement are being used as surrogate indicators of health-related quality of life for reporting in 2002.

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada and the Canadian Institute for Health Information.

Age Standardized Total Knee Replacement Rate
Nova Scotia by Sex, 1996 - 2000



Source: Hospital Morbidity Database, CIHI, Canada Census, Statistics Canada.

78 Total Hip Replacement Rate

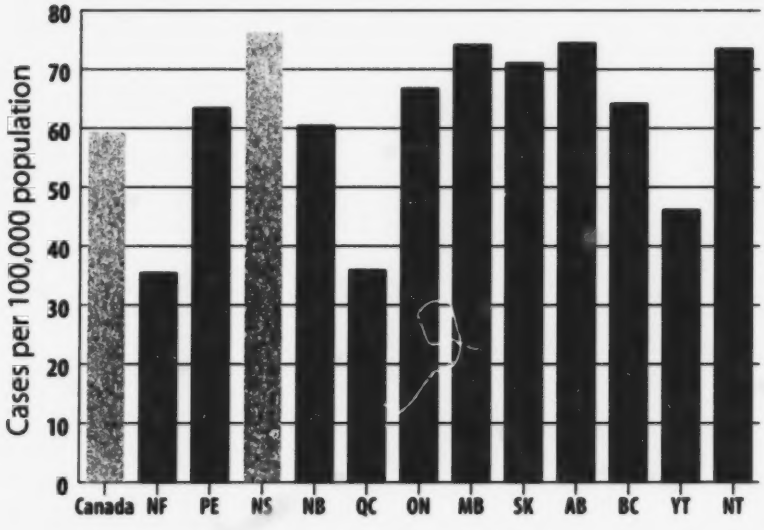
Definition

Age standardized rate of total unilateral or bilateral hip replacement surgery performed on in-patients in acute care hospitals.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?" The rates shown therefore do not cite the actual number of observed cases, but the numbers of expected cases in the standard population.

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized Total Hip Replacement Rate
Canada and Provinces, 1999/2000



Source: Hospital Morbidity Database, CIHI, Canada Census, Statistics Canada; ISQ.

Significance – Rationale and Notes for Interpretation

The intended outcome of most elective surgery is improved health-related quality of life. Recent research in BC specifically examined the appropriateness and health-related outcomes of several types of elective surgery; over 6200 surgical episodes were assessed. Results demonstrated that health-related quality of life improved substantially for the great majority

of those receiving one of six different elective procedures. Over 94% of those receiving a hip replacement reported significant improvement in pain, stiffness and overall functioning, as reflected in SF-36 and WOMAC results[10].

Technical Specifications

Numerator: number in-patient separations from acute care hospitals (discharges, sign-outs, and deaths) where the patient received a total hip replacement during the year, by age and gender categories

Denominator: population by age and gender categories, either from census or census estimates, for the year

Procedure Code(s): CCP code of 93.51 or 93.59 or ICD-9-CM code of 81.51 or 81.53 in any procedure field

Calculation(s): Standardized rates are age adjusted using a direct method of standardization based on the July 1st, 1991 Canadian population as follows:

Age	Pop.	Age	Pop.
<1	403,061	45-49	1,674,153
1-4	1,550,285	50-54	1,339,902
5-9	1,953,045	55-59	1,238,441
10-14	1,913,115	60-64	1,190,217
15-19	1,926,090	65-69	1,084,588
20-24	2,109,452	70-74	834,024
25-29	2,529,239	75-79	622,221
30-34	2,598,289	80-84	382,303
35-39	2,344,872	85-89	192,410
40-44	2,138,891	90+	95,467

Source: Hospital Morbidity Database, Canadian Institute for Health Information. Canada Census, Statistics Canada; ISQ

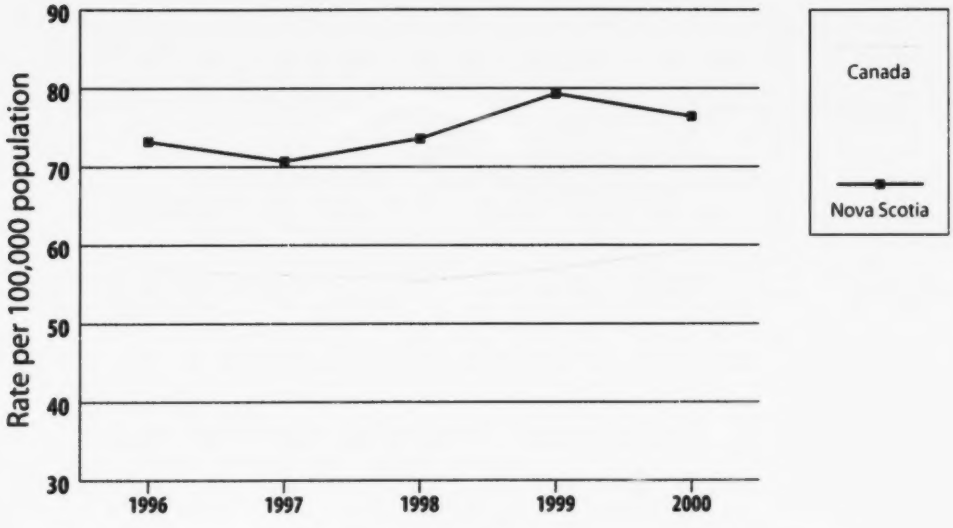
Disclosures

Exclusions: Patients not treated as inpatients in acute care hospitals and those who received their surgery prior to admission.

Limitations: Due to Limitations of existing databases, intervention rates for joint replacement are being used as surrogate indicators of health-related quality of life for reporting in 2002.

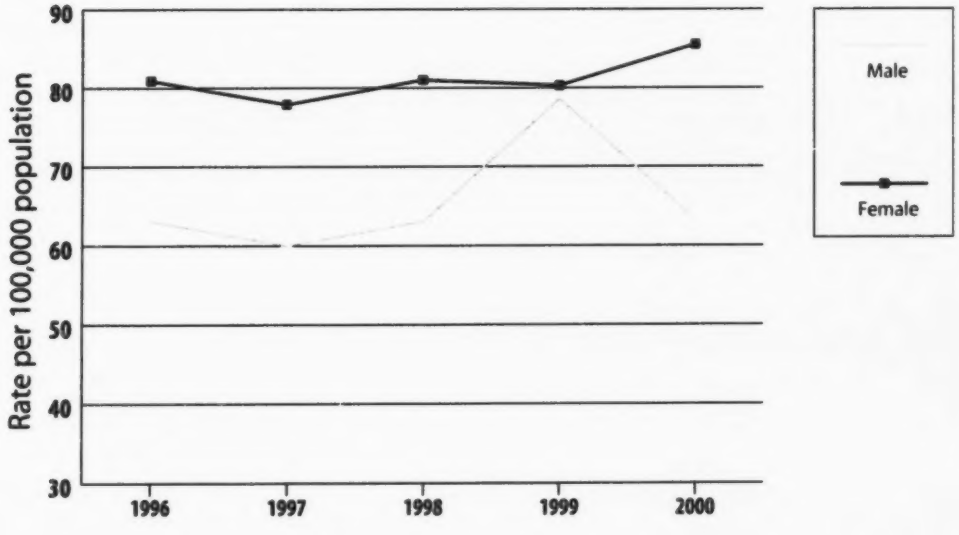
Departures from PIRC Requirements: None

Age Standardized Total Hip Replacement Rate
Nova Scotia vs Canada, 1996 - 2000



Source: Hospital Morbidity Database, CIHI, Canada Census, Statistics Canada, ISQ.

Age Standardized Total Hip Replacement Rate
Nova Scotia, 1996 - 2000



Source: Hospital Morbidity Database, CIHI, Canada Census, Statistics Canada.

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada and the Canadian Institute for Health Information.

82 Age Standardized Colorectal Cancer Incidence Rate

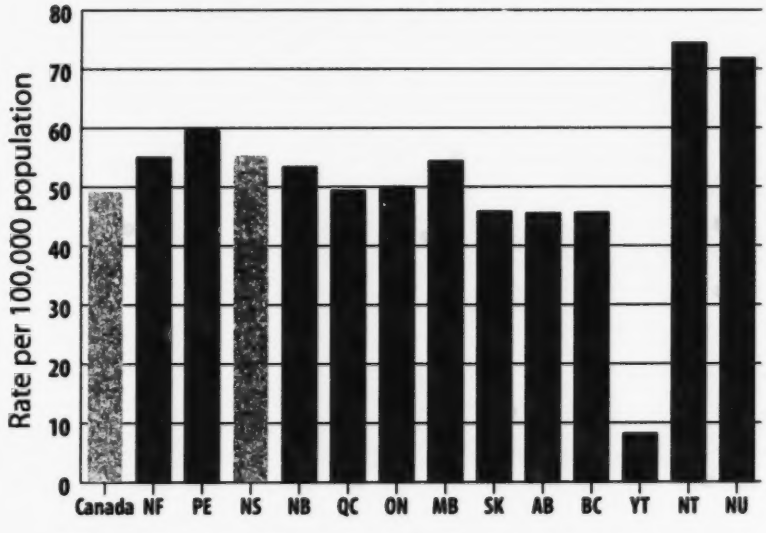
Definition

The reported number of newly diagnosed primary cancer cases in a given year for specific sites per 100,000 that would have occurred in the standard population if the actual age-specific rates observed in a given population had occurred in the standard population.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?"

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized Colorectal Cancer Incidence Rate
Canada and Provinces, 1997



Source: Statistics Canada, Canadian Cancer Registry, and Demography Division; ISQ.

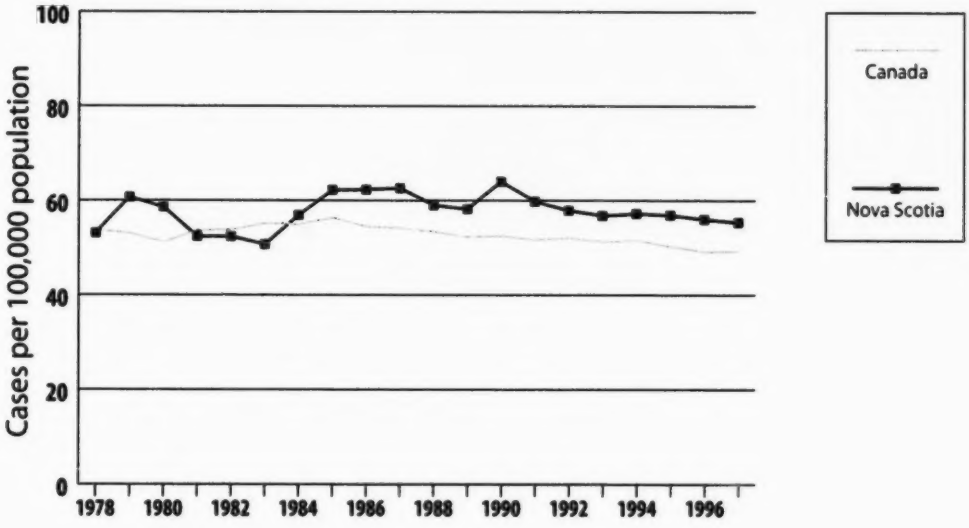
Significance – Rationale and Notes for Interpretation

Age-standardized incidence rates measure the appearance of new cancers. This incidence rate is influenced by two main groups of factors: (1) the underlying rate of cancer incidence, which in turn reflects, in part, the prevalence of risk factors such as smoking, and hence the success of primary prevention efforts, and (2) the rate of detection and diagnosis of cancers, which in turn can be influenced by the intensity and effectiveness of cancer screening programs.

Unfortunately from the viewpoint of interpreting this indicator, these two factors work in opposite directions. For example, an increase in measured cancer incidence could reflect either a deterioration in healthy life style or an improvement in screening. However, this latter kind of "screening artifact" is unlikely to carry on for a long period of time so that generally, a declining incidence of cancer suggests a positive change in population health. This interpretation issue is being addressed by the addition of staging data to the cancer registry systems. Cancer staging provides information on how advanced (serious) the cancer is at the time of diagnosis.

As a general comment on using incidence figures, there is an increasing awareness that a successful decrease in one disease may simply lead to an increase in the incidence of some other conditions, with no net benefit. Therefore, when one cause of death or disability is replaced by another, it is important to know if there is a net increase in life span or if there is a significant gap in time between the decrease in mortality for one cause and the increased mortality for another. Moreover, the quality of health during the remaining years is also crucial. Aggregated measures of health such as PYLL and DFLE help to address this issue.

Age Standardized Colorectal Cancer Incidence Rate
Nova Scotia vs Canada, 1978 - 1997



Source: Statistics Canada, Vital Statistics and Demography Division; ISQ.

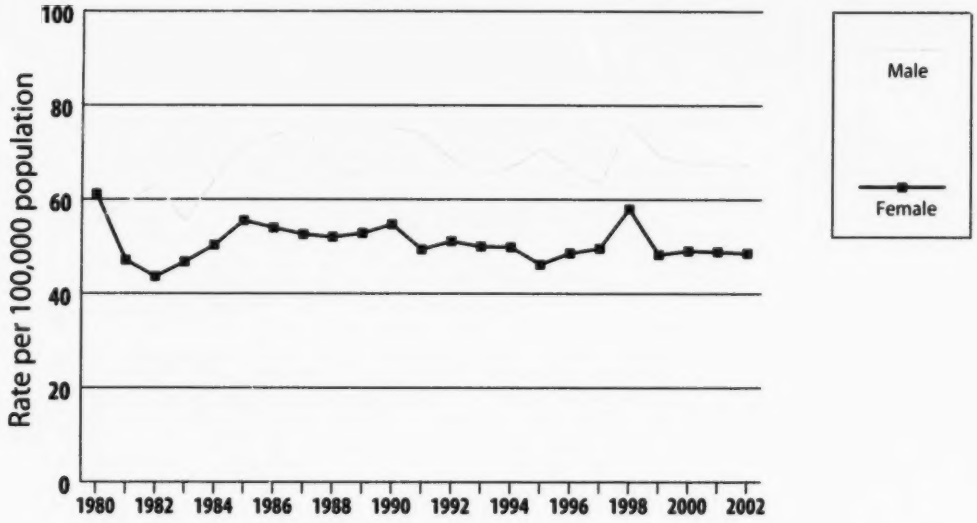
Technical Specifications

Codes: Colon/rectum (ICD-9 153-154)

Calculation: The age-standardized rate for each cancer site is calculated by multiplying each observed age-specific incidence rate by the standard population in the corresponding age-group, summing the results, multiplying the sum by 100,000 and then dividing the product by the total standard population. The 1996 Canadian population is used as the standard population.[11]

Source: Statistics Canada, Canadian Cancer Registry, and Demography Division (census population estimates); ISQ

Age Standardized Colorectal Cancer Incidence Rate
Nova Scotia by Sex, 1980 – 2002*



Source: Statistics Canada, Canadian Cancer Registry, and Demography Division.
* 1998-2002 data are projected estimates.

Disclosures

Exclusions: Non-residents of Canada

Limitations: 1998-2002 data are projected estimates.

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

Age Standardized Lung Cancer Incidence Rate

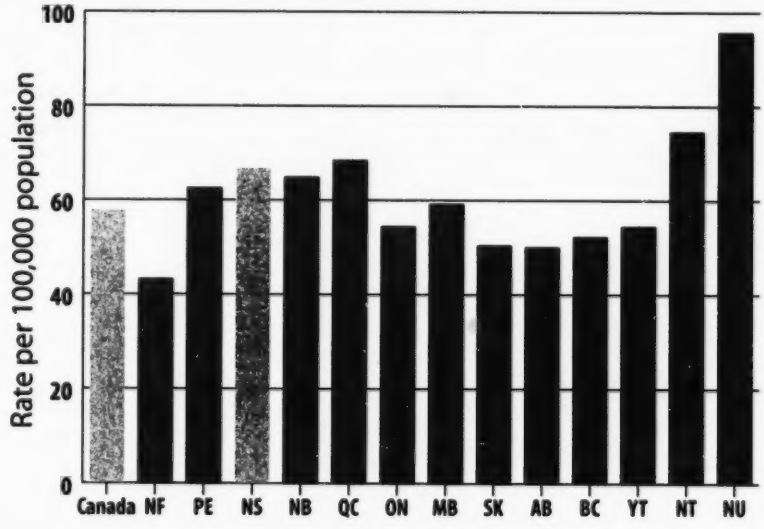
Definition

The reported number of newly diagnosed primary cancer cases in a given year for specific sites per 100,000 that would have occurred in the standard population if the actual age-specific rates observed in a given population had occurred in the standard population.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?"

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized Lung Cancer Incidence Rate
Canada and Provinces, 1997



Source: Statistics Canada, Canadian Cancer Registry, and Demography Division; ISQ.

86 Significance – Rationale and Notes for Interpretation

Age-standardized incidence rates measure the appearance of new cancers. This incidence rate is influenced by two main groups of factors: (1) the underlying rate of cancer incidence, which in turn reflects, in part, the prevalence of risk factors such as smoking, and hence the success of primary prevention efforts, and (2) the rate of detection and diagnosis of cancers, which in turn can be influenced by the intensity and effectiveness of cancer screening programs.

Unfortunately from the viewpoint of interpreting this indicator, these two factors work in opposite directions. For example, an increase in measured cancer incidence could reflect either a deterioration in healthy life style or an improvement in screening. However, this latter kind of "screening artifact" is unlikely to carry on for a long period of time so that generally, a declining incidence of cancer suggests a positive change in population health. This interpretation issue is being addressed by the addition of staging data to the cancer registry systems. Cancer staging provides information on how advanced (serious) the cancer is at the time of diagnosis.

As a general comment on using incidence figures, there is an increasing awareness that a successful decrease in one disease may simply lead to an increase in the incidence of some other conditions, with no net benefit. Therefore, when one cause of death or disability is replaced by another, it is important to know if there is a net increase in life span or if there is a significant gap in time between the decrease in mortality for one cause and the increased mortality for another. Moreover, the quality of health during the remaining years is also crucial. Aggregated measures of health such as PYLL and DFLE help to address this issue.

Age Standardized Lung Cancer Incidence Rate
Nova Scotia vs Canada, 1978 - 1997

Source: Statistics Canada, Canadian Cancer Registry, and Demography Division; ISQ.

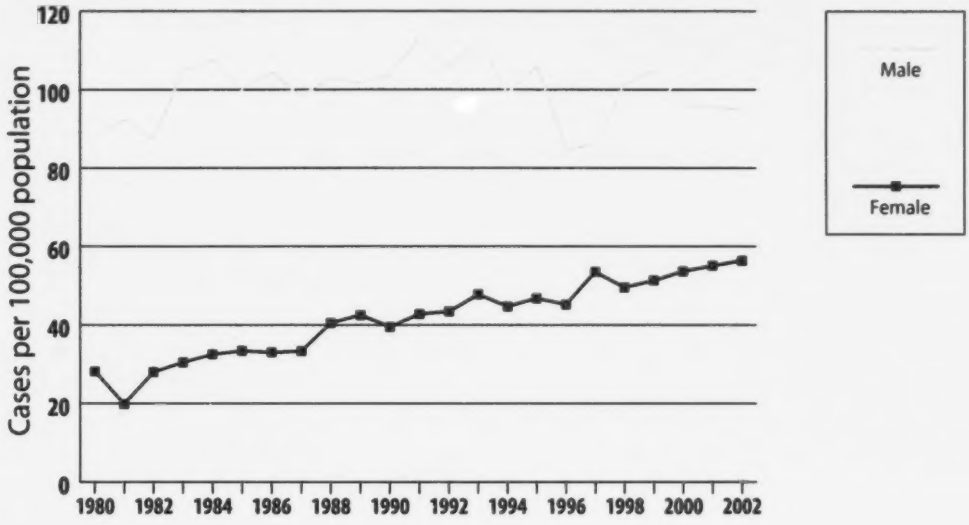
Technical Specifications

Codes: Lung (ICD-9 162)

Calculation: The age-standardized rate for each cancer site is calculated by multiplying each observed age-specific incidence rate by the standard population in the corresponding age-group, summing the results, multiplying the sum by 100,000 and then dividing the product by the total standard population. The 1996 Canadian population is used as the standard population.[12]

Source: Statistics Canada, Canadian Cancer Registry, and Demography Division (census population estimates); ISQ

Age Standardized Lung Cancer Incidence Rate
Nova Scotia by Sex, 1980 - 2002*



Source: Statistics Canada, Canadian Cancer Registry, and Demography Division.
* 1998-2002 data are projected estimates.

Disclosures

Exclusions: Non-residents of Canada

Limitations: 1998-2002 data are projected estimates.

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

88 Age Standardized Prostate Cancer Incidence Rate

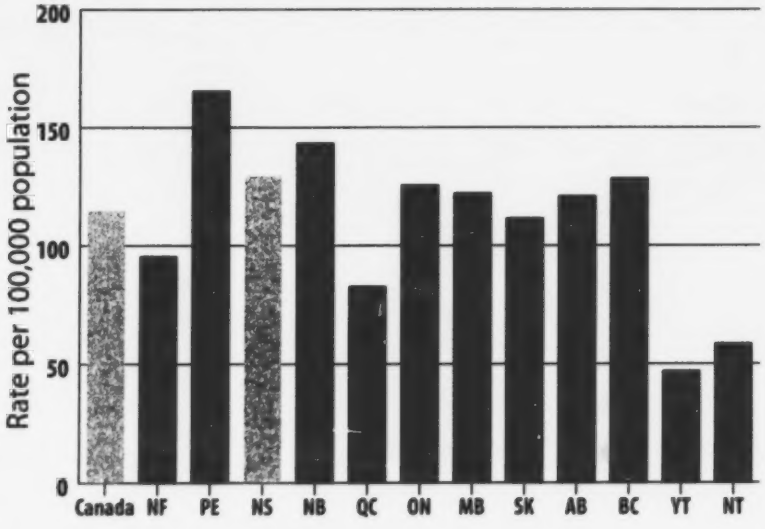
Definition

The reported number of newly diagnosed primary cancer cases in a given year for specific sites per 100,000 that would have occurred in the standard population if the actual age-specific rates observed in a given population had occurred in the standard population.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?"

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized Prostate Cancer Incidence Rate
Canada and Provinces, 1997



Source: Statistics Canada, Canadian Cancer Registry, and Demography Division; ISQ.

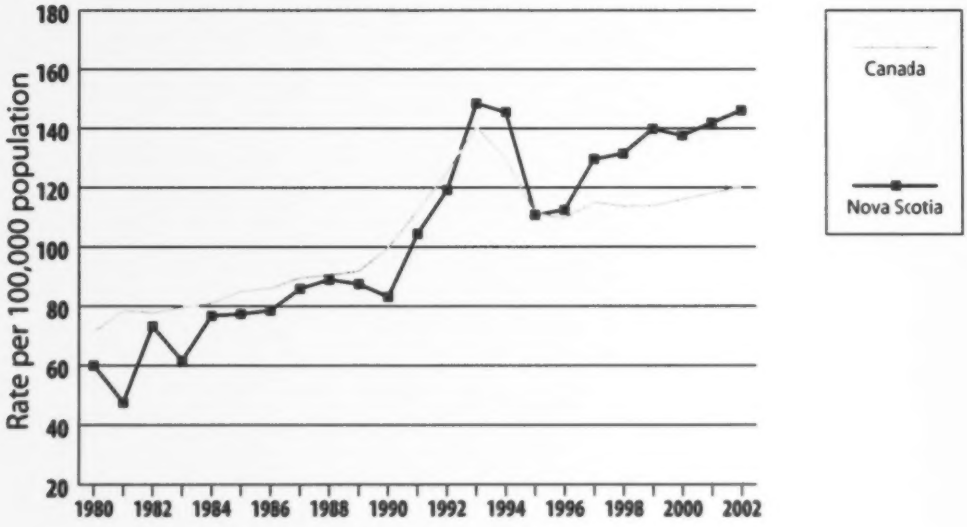
Significance – Rationale and Notes for Interpretation

Age-standardized incidence rates measure the appearance of new cancers. This incidence rate is influenced by two main groups of factors: (1) the underlying rate of cancer incidence, which in turn reflects, in part, the prevalence of risk factors such as smoking, and hence the success of primary prevention efforts, and (2) the rate of detection and diagnosis of cancers, which in turn can be influenced by the intensity and effectiveness of cancer screening programs.

Unfortunately from the viewpoint of interpreting this indicator, these two factors work in opposite directions. For example, an increase in measured cancer incidence could reflect either a deterioration in healthy life style or an improvement in screening. However, this latter kind of "screening artifact" is unlikely to carry on for a long period of time so that generally, a declining incidence of cancer suggests a positive change in population health. This interpretation issue is being addressed by the addition of staging data to the cancer registry systems. Cancer staging provides information on how advanced (serious) the cancer is at the time of diagnosis.

As a general comment on using incidence figures, there is an increasing awareness that a successful decrease in one disease may simply lead to an increase in the incidence of some other conditions, with no net benefit. Therefore, when one cause of death or disability is replaced by another, it is important to know if there is a net increase in life span or if there is a significant gap in time between the decrease in mortality for one cause and the increased mortality for another. Moreover, the quality of health during the remaining years is also crucial. Aggregated measures of health such as PYLL and DFLE help to address this issue.

Age Standardized Prostate Cancer Incidence Rate
Nova Scotia vs Canada, 1980 - 2002*



Source: Statistics Canada, Canadian Cancer Registry, and Demography Division, ISQ.
* 1998-2002 data are projected estimates.

Technical Specifications

Codes: Prostate (ICD-9 185)

Calculation: The age-standardized rate for each cancer site is calculated by multiplying each observed age-specific incidence rate by the standard population in the corresponding age-group, summing the results, multiplying the sum by 100,000 and then dividing the product by the total standard population. The 1996 Canadian population is used as the standard population.[11]

Source: Statistics Canada, Canadian Cancer Registry, and Demography Division (census population estimates); ISQ

Disclosures

Exclusions: Non-residents of Canada

Limitations: 1998-2002 data are projected estimates.

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

Age Standardized Breast Cancer Incidence Rate

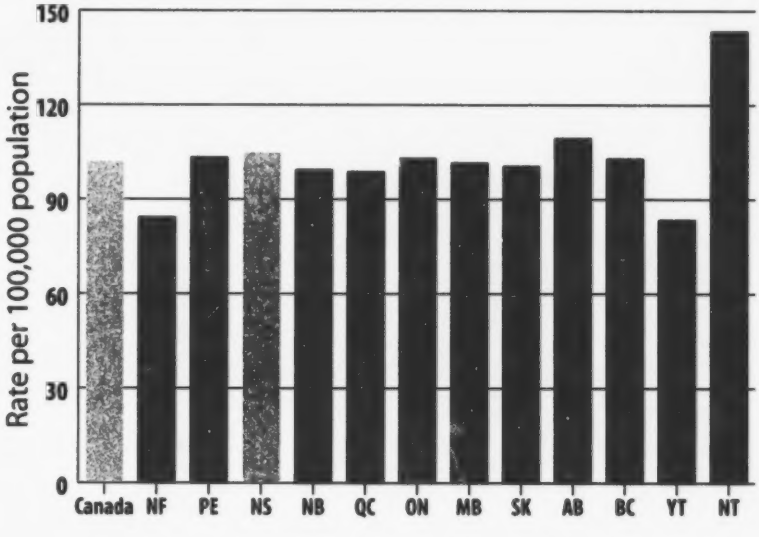
Definition

The reported number of newly diagnosed primary cancer cases in a given year for specific sites per 100,000 that would have occurred in the standard population if the actual age-specific rates observed in a given population had occurred in the standard population.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?"

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized Breast Cancer Incidence Rate
Canada and Provinces, 1997



Source: Statistics Canada, Canadian Cancer Registry, and Demography Division; ISQ.

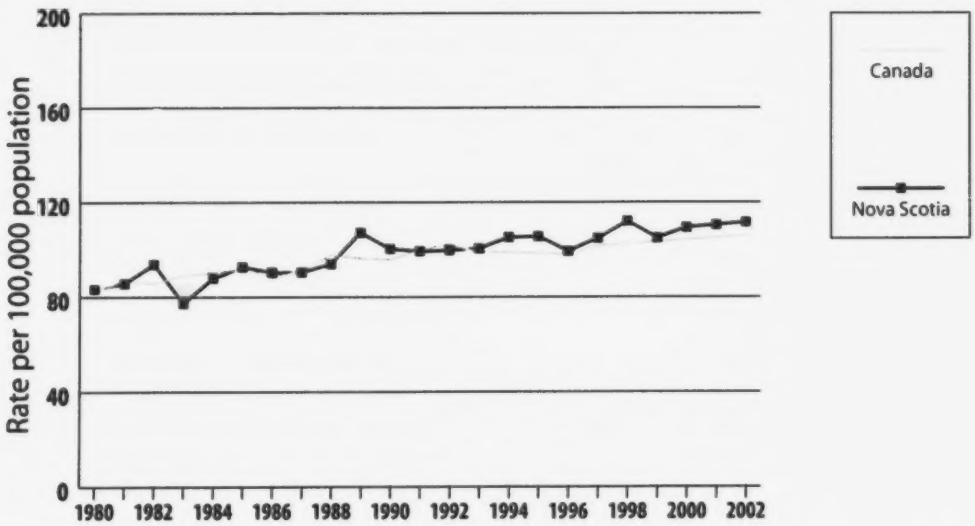
92 Significance – Rationale and Notes for Interpretation

Age-standardized incidence rates measure the appearance of new cancers. This incidence rate is influenced by two main groups of factors: (1) the underlying rate of cancer incidence, which in turn reflects, in part, the prevalence of risk factors such as smoking, and hence the success of primary prevention efforts, and (2) the rate of detection and diagnosis of cancers, which in turn can be influenced by the intensity and effectiveness of cancer screening programs.

Unfortunately from the viewpoint of interpreting this indicator, these two factors work in opposite directions. For example, an increase in measured cancer incidence could reflect either a deterioration in healthy life style or an improvement in screening. However, this latter kind of "screening artifact" is unlikely to carry on for a long period of time so that generally, a declining incidence of cancer suggests a positive change in population health. This interpretation issue is being addressed by the addition of staging data to the cancer registry systems. Cancer staging provides information on how advanced (serious) the cancer is at the time of diagnosis.

As a general comment on using incidence figures, there is an increasing awareness that a successful decrease in one disease may simply lead to an increase in the incidence of some other conditions, with no net benefit. Therefore, when one cause of death or disability is replaced by another, it is important to know if there is a net increase in life span or if there is a significant gap in time between the decrease in mortality for one cause and the increased mortality for another. Moreover, the quality of health during the remaining years is also crucial. Aggregated measures of health such as PYLL and DFLE help to address this issue.

Age Standardized Breast Cancer Incidence Rate
Nova Scotia vs Canada, 1980 – 2002*



Source: Statistics Canada, Canadian Cancer Registry, and Demography Division, ISQ.
1998-2002 data are projected estimates.

Technical Specifications

Codes: Female breast (ICD-9 174)

Calculation: The age-standardized rate for each cancer site is calculated by multiplying each observed age-specific incidence rate by the standard population in the corresponding age-group, summing the results, multiplying the sum by 100,000 and then dividing the product by the total standard population. The 1996 Canadian population is used as the standard population.[11]

Source: Statistics Canada, Canadian Cancer Registry, and Demography Division (census population estimates); ISQ

Disclosures

Exclusions: Non-residents of Canada

Limitations: 1998-2002 data are projected estimates.

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada

94 Potential Years of Life Lost Due to Colorectal Cancer

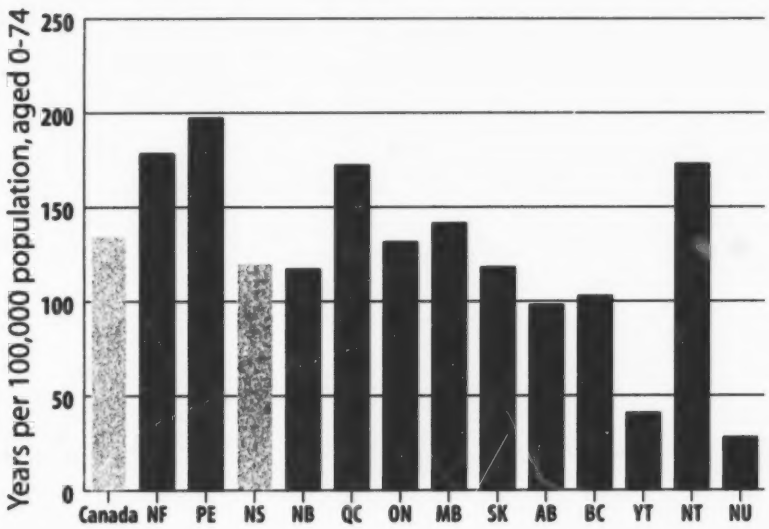
Definition

Potential years of life lost (PYLL) is the number of years of life "lost" when a person dies "prematurely" from any cause – defined as dying before age 75, expressed as a rate per 100,000 people. A person dying at age 25, for example, has lost 50 potential years of life.

PYLLs can also be estimated for a specific cause, in which case the indicator measures the number of years of life "lost" when a person dies before age 75 due to a cause like injury, cancer, AMI or stroke.

Potential years of life lost reflects the additional years a person could have lived had they not developed a particular illness. If, on average, people are expected to live 75 years, and someone dies at age 55, then 20 potential years of life have been lost.

Potential Years of Life Lost due to Colorectal Cancer
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

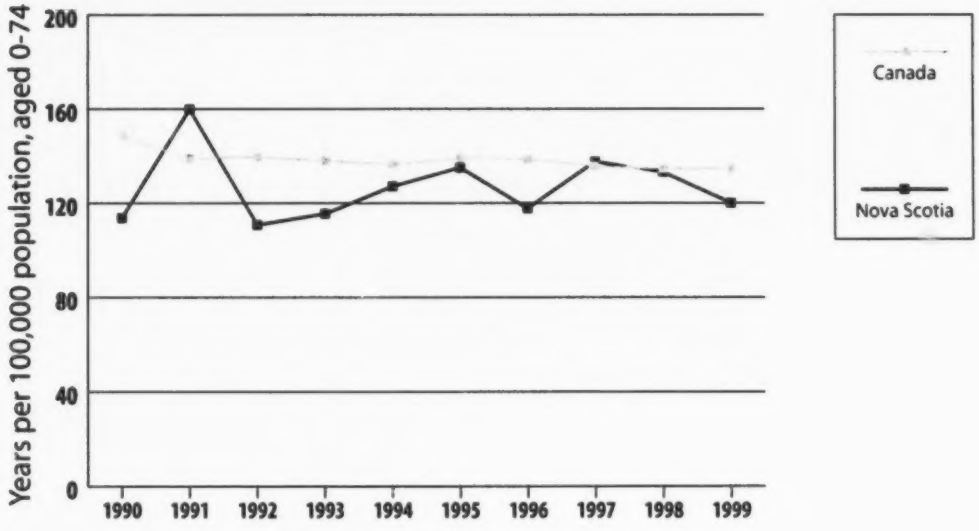
Significance – Rationale and Notes for Interpretation

The most widely used indicator based on mortality rates is life expectancy. It measures average expectation of life, and therefore reflects both changing lengths of life for the very old, and changes in mortality rates for the non-elderly. PYLL is a complementary indicator focusing on mortality among the non-elderly. It reflects the level of success in preventing premature (and therefore presumably preventable or postponable) loss of life, with its consequent loss of social and economic productivity. It is an overall indicator of population health and well being, and effectiveness of preventive programs.

It should be noted that, at old ages, co-morbidity becomes very frequent and death is often the result of a complex process. This can make PYLL more meaningful for diseases that can be identified as the sole cause of death and for those that kill at an early age. Unfortunately, PYLL is only based on single causes of death statistics.

Note: In the 1970s and 1980s, Canada PYLL was based on age < 70. Other cutoffs have been used by different countries and at different points in time. Any work done now on PYLL based on < age 75 will differ from published data on PYLL from most previous Canadian sources and should not be compared with each other. The choice of age 70 or 75 is arbitrary, and does not greatly affect time trends or inter-provincial comparisons.

Potential Years of Life Lost due to Colorectal Cancer
Nova Scotia vs Canada, 1990 - 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

Technical Specifications

Numerator: Deaths of persons under exact age 75, by age group, sex and cause. Take the midpoint in each age group, subtract from 75 and multiply the number of deaths in that age group disaggregated by sex and cause of death. This represents PYLL.

Denominator: Population estimate

Calculation: Formula is as follows:

Age group	Yrs lost
0-1	74.9
1-4	72.0
5-9	67.5
10-14	62.5
15-19	57.5
20-24	52.5
25-29	47.5
30-34	42.5
35-39	37.5
40-44	32.5
45-49	27.5
50-54	22.5
55-59	17.5
60-64	12.5
65-69	7.5
74-	2.5

Total PYLL = sum of all deaths in each age group X yrs lost (per table above)

Crude PYLL rate per 100,000 = sum of all deaths in each age group X yrs lost X 100,000 / estimated population

Crude cause-specific PYLL rate per 100,000 = sum of all deaths in each age group due to specific cause X yrs lost X 100,000 / estimated population.[17]

Source: Statistics Canada, Vital Statistics, Death Data Base and Demography Division (population estimates); ISQ

Disclosures

Exclusions: Non-residents of Canada, deaths of Canadians whose province or territory of residence was unknown, and deaths for which the age of deceased was unknown, are excluded from the deaths and population estimates used in the numerator and denominator

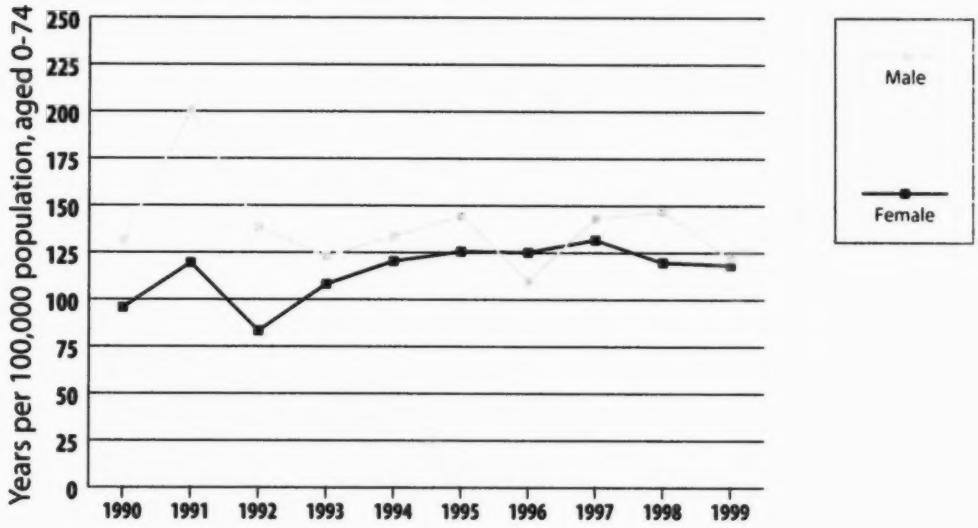
Limitations: N/A

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada. From 1979 to 1999, the underlying cause of death was coded using ICD-9; beginning with 2000, the underlying cause of death will be coded using ICD-10, thus introducing discontinuity to the trend data.

Potential Years of Life Lost due to Colorectal Cancer
Nova Scotia by Sex, 1990 - 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division.

98 Potential Years of Life Lost Due to Lung Cancer

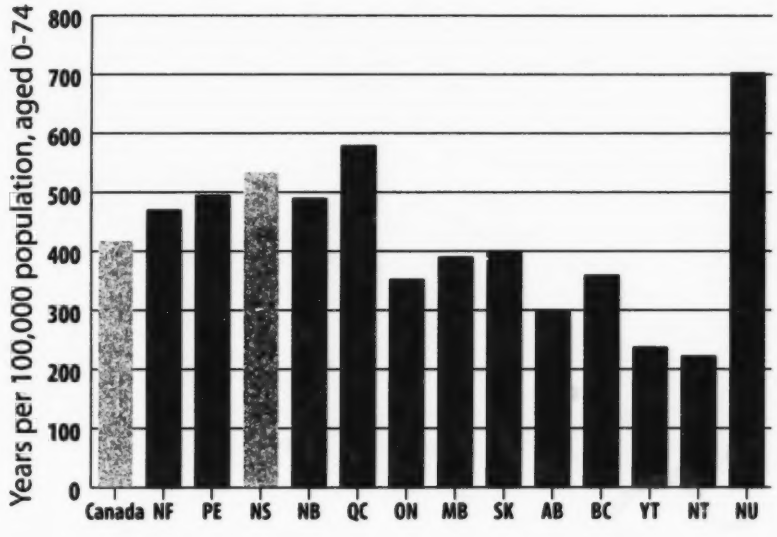
Definition

Potential years of life lost (PYLL) is the number of years of life "lost" when a person dies "prematurely" from any cause – defined as dying before age 75 expressed as a rate per 100,000 people. A person dying at age 25, for example, has lost 50 potential years of life.

PYLLs can also be estimated for a specific cause, in which case the indicator measures the number of years of life "lost" when a person dies before age 75 due to a cause like injury, cancer, AMI or stroke.

Potential years of life lost reflects the additional years a person could have lived had they not developed a particular illness. If, on average, people are expected to live 75 years, and someone dies at age 55, then 20 potential years of life have been lost.

Potential Years of Life Lost due to Colorectal Cancer
Canada and Provinces, 1990 - 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

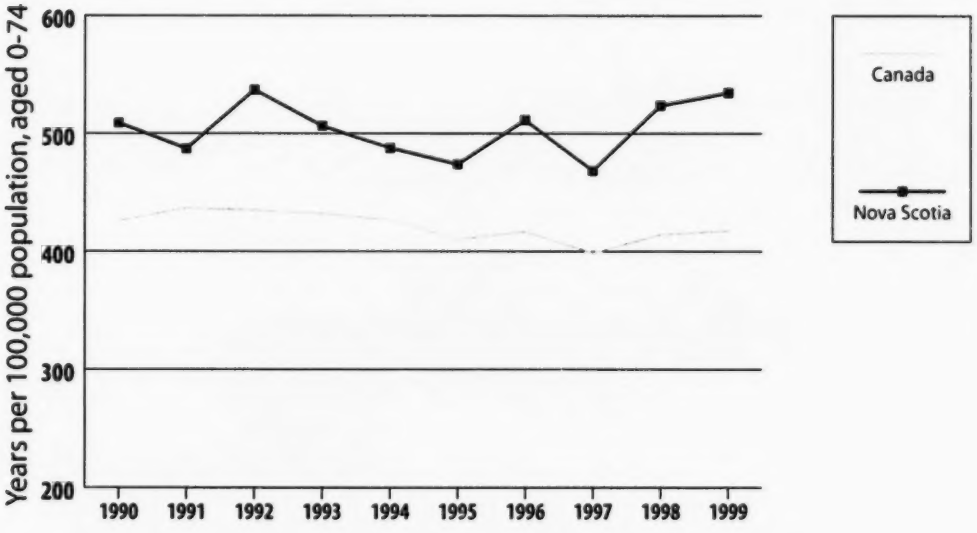
Significance – Rationale and Notes for Interpretation

The most widely used indicator based on mortality rates is life expectancy. It measures average expectation of life, and therefore reflects both changing lengths of life for the very old, and changes in mortality rates for the non-elderly. PYLL is a complementary indicator focusing on mortality among the non-elderly. It reflects the level of success in preventing premature (and therefore presumably preventable or postponable) loss of life, with its consequent loss of social and economic productivity. It is an overall indicator of population health and well being, and effectiveness of preventive programs.

It should be noted that, at old ages, co-morbidity becomes very frequent and death is often the result of a complex process. This can make PYLL more meaningful for diseases that can be identified as the sole cause of death and for those that kill at an early age. Unfortunately, PYLL is only based on single causes of death statistics.

Note: In the 1970s and 1980s, Canada PYLL was based on age < 70. Other cutoffs have been used by different countries and at different points in time. Any work done now on PYLL based on < age 75 will differ from published data on PYLL from most previous Canadian sources and should not be compared with each other. The choice of age 70 or 75 is arbitrary, and does not greatly affect time trends or inter-provincial comparisons.

Potential Years of Life Lost due to Lung Cancer
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

100 Technical Specifications

Numerator: Deaths of persons under exact age 75, by age group, sex and cause. Take the midpoint in each age group, subtract from 75 and multiply the number of deaths in that age group disaggregated by sex and cause of death. This represents PYLL.

Denominator: Population estimate

Calculation: Formula is as follows:

Age group	Yrs lost
0-1	74.9
1-4	72.0
5-9	67.5
10-14	62.5
15-19	57.5
20-24	52.5
25-29	47.5
30-34	42.5
35-39	37.5
40-44	32.5
45-49	27.5
50-54	22.5
55-59	17.5
60-64	12.5
65-69	7.5
70-74	2.5

Total PYLL = sum of all deaths in each age group X yrs lost (per table above)

Crude PYLL rate per 100,000 = sum of all deaths in each age group X yrs lost X 100,000 / estimated population

Crude cause-specific PYLL rate per 100,000 = sum of all deaths in each age group due to specific cause X yrs lost X 100,000 / estimated population 16

Source: Statistics Canada, Vital Statistics, Death Data Base and Demography Division (population estimates); ISQ

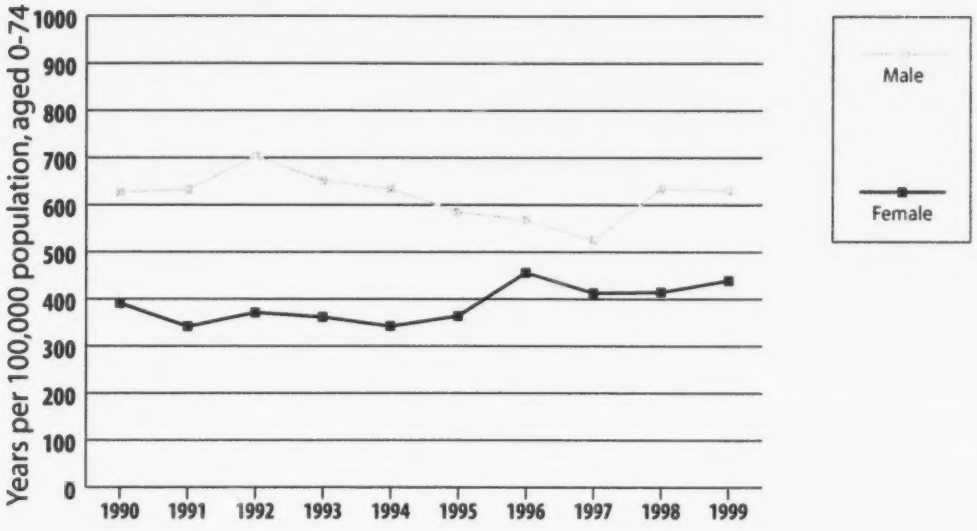
Disclosures

Exclusions: Non-residents of Canada, deaths of Canadians whose province or territory of residence was unknown, and deaths for which the age of deceased was unknown, are excluded from the deaths and population estimates used in the numerator and denominator

Limitations: N/A

Departures from PIRC Requirements: None

Potential Years of Life Lost due to Lung Cancer
Nova Scotia by Sex, 1990 - 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division.

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada. From 1979 to 1999, the underlying cause of death was coded using ICD-9; beginning with 2000, the underlying cause of death will be coded using ICD-10, thus introducing discontinuity to the trend data.

102 Potential Years of Life Lost Due to Prostate Cancer

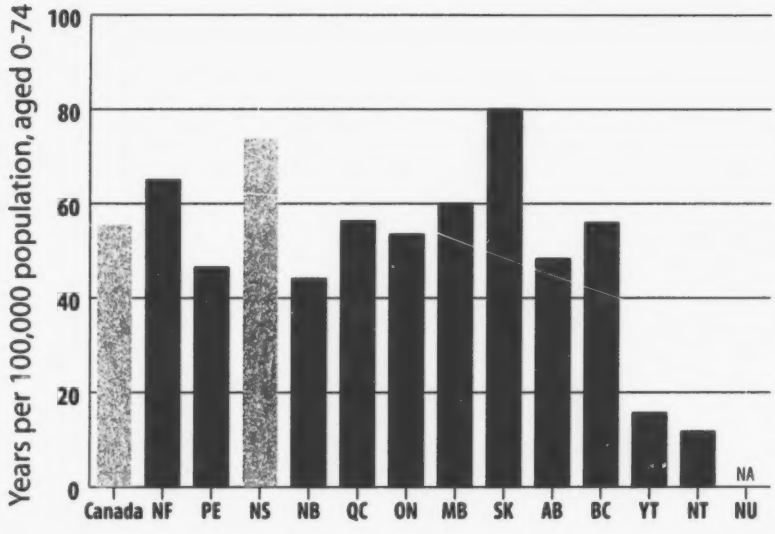
Definition

Potential years of life lost (PYLL) is the number of years of life "lost" when a person dies "prematurely" from any cause – defined as dying before age 75 expressed as a rate per 100,000 people. A person dying at age 25, for example, has lost 50 potential years of life.

PYLLs can also be estimated for a specific cause, in which case the indicator measures the number of years of life "lost" when a person dies before age 75 due to a cause like injury, cancer, AMI or stroke.

Potential years of life lost reflects the additional years a person could have lived had they not developed a particular illness. If, on average, people are expected to live 75 years, and someone dies at age 55, then 20 potential years of life have been lost.

Potential Years of Life Lost due to Prostate Cancer
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

Significance – Rationale and Notes for Interpretation

The most widely used indicator based on mortality rates is life expectancy. It measures average expectation of life, and therefore reflects both changing lengths of life for the very old, and changes in mortality rates for the non-elderly. PYLL is a complementary indicator focusing on mortality among the non-elderly. It reflects the level of success in preventing premature (and

therefore presumably preventable or postponable) loss of life, with its consequent loss of social and economic productivity. It is an overall indicator of population health and well being, and effectiveness of preventive programs.

It should be noted that, at old ages, co-morbidity becomes very frequent and death is often the result of a complex process. This can make PYLL more meaningful for diseases that can be identified as the sole cause of death and for those that kill at an early age. Unfortunately, PYLL is only based on single causes of death statistics.

Note: In the 1970s and 1980s, Canada PYLL was based on age < 70. Other cutoffs have been used by different countries and at different points in time. Any work done now on PYLL based on < age 75 will differ from published data on PYLL from most previous Canadian sources and should not be compared with each other. The choice of age 70 or 75 is arbitrary, and does not greatly affect time trends or inter-provincial comparisons.

Potential Years of Life Lost due to Prostate Cancer
Nova Scotia vs Canada, 1990 - 1999

Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

Technical Specifications

Numerator: Deaths of persons under exact age 75, by age group, sex and cause. Take the midpoint in each age group, subtract from 75 and multiply the number of deaths in that age group disaggregated by sex and cause of death. This represents PYLL.

Denominator: Population estimate

Calculation: Formula is as follows:

Age group	Yrs lost
0-1	74.9
1-4	72.0
5-9	67.5
10-14	62.5
15-19	57.5
20-24	52.5
25-29	47.5
30-34	42.5
35-39	37.5
40-44	32.5
45-49	27.5
50-54	22.5
55-59	17.5
60-64	12.5
65-69	7.5
70-74	2.5

Total PYLL = sum of all deaths in each age group X yrs lost (per table above)

Crude PYLL rate per 100,000 = sum of all deaths in each age group X yrs lost X 100,000 / estimated population

Crude cause-specific PYLL rate per 100,000 = sum of all deaths in each age group due to specific cause X yrs lost X 100,000 / estimated population[17]

Source: Statistics Canada, Vital Statistics, Death Data Base and Demography Division (population estimates); ISQ

Disclosures

Exclusions: Non-residents of Canada, deaths of Canadians whose province or territory of residence was unknown, and deaths for which the age of deceased was unknown, are excluded from the deaths and population estimates used in the numerator and denominator

Limitations: N/A

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada. From 1979 to 1999, the underlying cause of death was coded using ICD-9; beginning with 2000, the underlying cause of death will be coded using ICD-10, thus introducing discontinuity to the trend data.

Potential Years of Life Lost Due to Breast Cancer

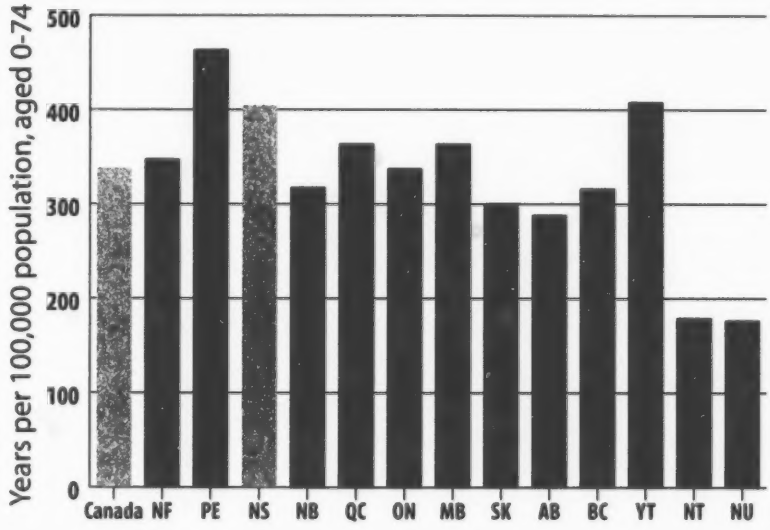
Definition

Potential years of life lost (PYLL) is the number of years of life "lost" when a person dies "prematurely" from any cause – defined as dying before age 75 expressed as a rate per 100,000 people. A person dying at age 25, for example, has lost 50 potential years of life.

PYLLs can also be estimated for a specific cause, in which case the indicator measures the number of years of life "lost" when a person dies before age 75 due to a cause like injury, cancer, AMI or stroke.

Potential years of life lost reflects the additional years a person could have lived had they not developed a particular illness. If, on average, people are expected to live 75 years, and someone dies at age 55, then 20 potential years of life have been lost.

Potential Years of Life Lost due to Breast Cancer
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

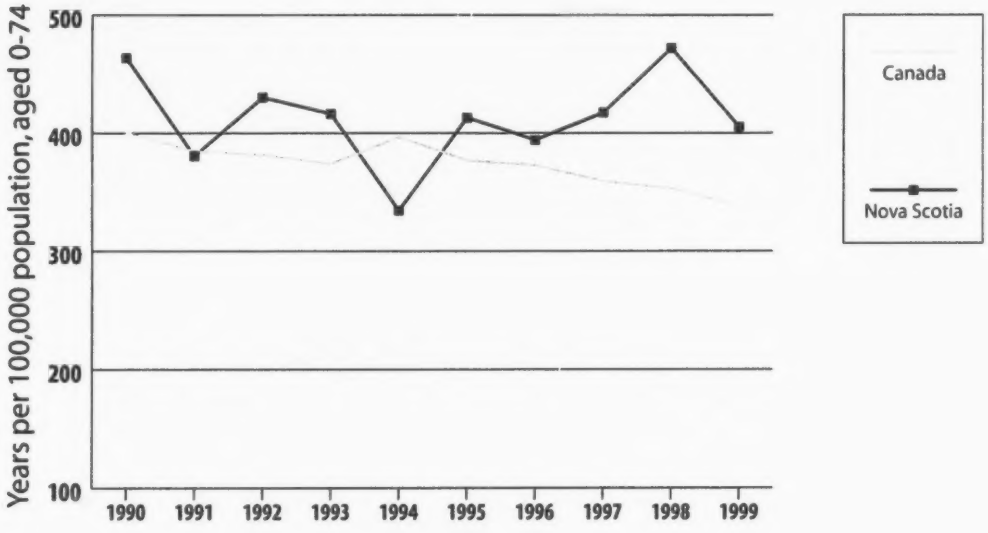
106 Significance – Rationale and Notes for Interpretation

The most widely used indicator based on mortality rates is life expectancy. It measures average expectation of life, and therefore reflects both changing lengths of life for the very old, and changes in mortality rates for the non-elderly. PYLL is a complementary indicator focusing on mortality among the non-elderly. It reflects the level of success in preventing premature (and therefore presumably preventable or postponable) loss of life, with its consequent loss of social and economic productivity. It is an overall indicator of population health and well being, and effectiveness of preventive programs.

It should be noted that, at old ages, co-morbidity becomes very frequent and death is often the result of a complex process. This can make PYLL more meaningful for diseases that can be identified as the sole cause of death and for those that kill at an early age. Unfortunately, PYLL is only based on single causes of death statistics.

Note: In the 1970s and 1980s, Canada PYLL was based on age < 70. Other cutoffs have been used by different countries and at different points in time. Any work done now on PYLL based on < age 75 will differ from published data on PYLL from most previous Canadian sources and should not be compared with each other. The choice of age 70 or 75 is arbitrary, and does not greatly affect time trends or inter-provincial comparisons.

Potential Years of Life Lost due to Breast Cancer
Nova Scotia vs Canada, 1990 - 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

Technical Specifications

Numerator: Deaths of persons under exact age 75, by age group, sex and cause. Take the midpoint in each age group, subtract from 75 and multiply the number of deaths in that age group disaggregated by sex and cause of death. This represents PYLL.

Denominator: Population estimate

Calculation: Formula is as follows:

Age group	Yrs lost
0-1	74.9
1-4	72.0
5-9	67.5
10-14	62.5
15-19	57.5
20-24	52.5
25-29	47.5
30-34	42.5
35-39	37.5
40-44	32.5
45-49	27.5
50-54	22.5
55-59	17.5
60-64	12.5
65-69	7.5
70-74	2.5

Total PYLL = sum of all deaths in each age group X yrs lost (per table above)

Crude PYLL rate per 100,000 = sum of all deaths in each age group X yrs lost X 100,000 / estimated population

Crude cause-specific PYLL rate per 100,000 = sum of all deaths in each age group due to specific cause X yrs lost X 100,000 / estimated population [18]

Source: Statistics Canada, Vital Statistics, Death Data Base and Demography Division (population estimates); ISQ

108 Disclosures

Exclusions: Non-residents of Canada, deaths of Canadians whose province or territory of residence was unknown, and deaths for which the age of deceased was unknown, are excluded from the deaths and population estimates used in the numerator and denominator

Limitations: N/A

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada. From 1979 to 1999, the underlying cause of death was coded using ICD-9; beginning with 2000, the underlying cause of death will be coded using ICD-10, thus introducing discontinuity to the trend data.

Potential Years of Life Lost Due to Acute Myocardial Infarction

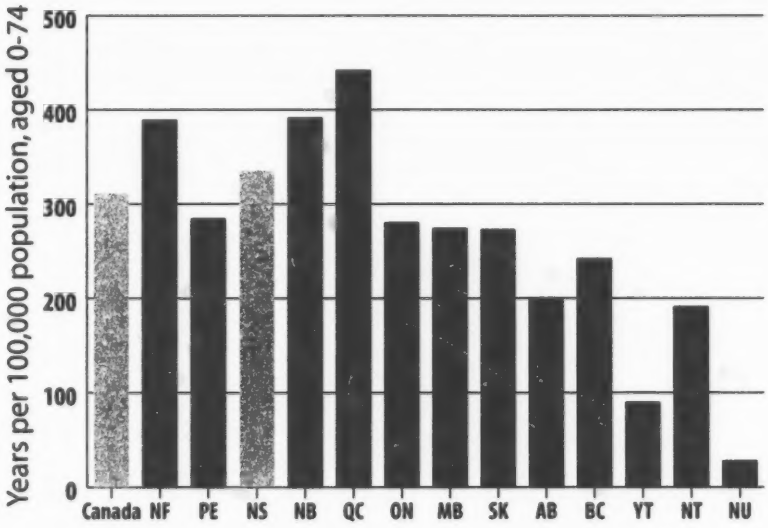
Definition

Potential years of life lost (PYLL) is the number of years of life "lost" when a person dies "prematurely" from any cause – defined as dying before age 75 expressed as a rate per 100,000 people. A person dying at age 25, for example, has lost 50 potential years of life.

PYLLs can also be estimated for a specific cause, in which case the indicator measures the number of years of life "lost" when a person dies before age 75 due to a cause like injury, cancer, AMI or stroke.

Potential years of life lost reflects the additional years a person could have lived had they not developed a particular illness. If, on average, people are expected to live 75 years, and someone dies at age 55, then 20 potential years of life have been lost.

Potential Years of Life Lost due to Acute Myocardial Infarction
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

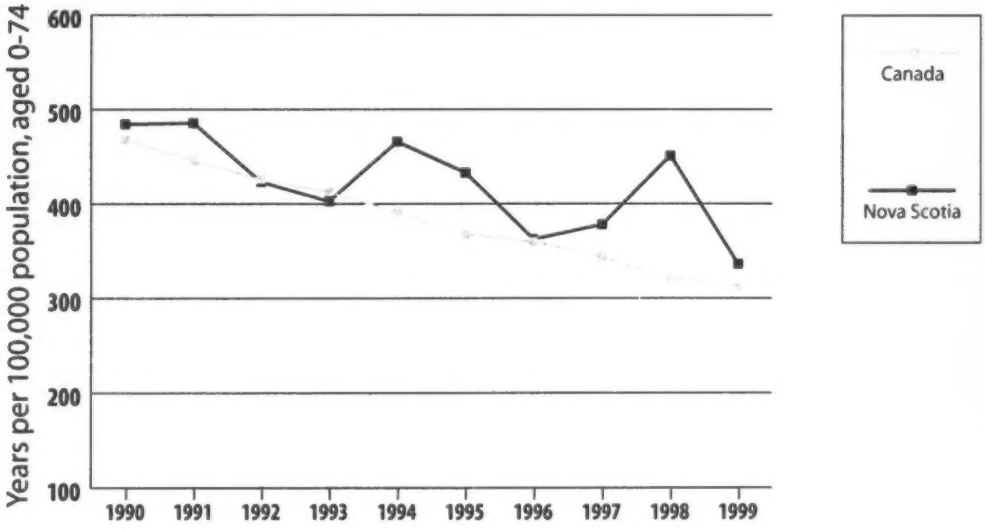
110 Significance – Rationale and Notes for Interpretation

The most widely used indicator based on mortality rates is life expectancy. It measures average expectation of life, and therefore reflects both changing lengths of life for the very old, and changes in mortality rates for the non-elderly. PYLL is a complementary indicator focusing on mortality among the non-elderly. It reflects the level of success in preventing premature (and therefore presumably preventable or postponable) loss of life, with its consequent loss of social and economic productivity. It is an overall indicator of population health and well being, and effectiveness of preventive programs.

It should be noted that, at old ages, co-morbidity becomes very frequent and death is often the result of a complex process. This can make PYLL more meaningful for diseases that can be identified as the sole cause of death and for those that kill at an early age. Unfortunately, PYLL is only based on single causes of death statistics.

Note: In the 1970s and 1980s, Canada PYLL was based on age < 70. Other cutoffs have been used by different countries and at different points in time. Any work done now on PYLL based on < age 75 will differ from published data on PYLL from most previous Canadian sources and should not be compared with each other. The choice of age 70 or 75 is arbitrary, and does not greatly affect time trends or inter-provincial comparisons.

Potential Years of Life Lost due to Acute Myocardial Infarction
Nova Scotia vs Canada, 1990 - 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

Technical Specifications

Numerator: Deaths of persons under exact age 75, by age group, sex and cause. Take the midpoint in each age group, subtract from 75 and multiply the number of deaths in that age group disaggregated by sex and cause of death. This represents PYLL.

Denominator: Population estimate **Calculation:** Formula is as follows:

Age group	Yrs lost
0-1	74.9
1-4	72.0
5-9	67.5
10-14	62.5
15-19	57.5
20-24	52.5
25-29	47.5
30-34	42.5
35-39	37.5
40-44	32.5
45-49	27.5
50-54	22.5
55-59	17.5
60-64	12.5
65-69	7.5
70-74	2.5

Total PYLL = sum of all deaths in each age group X yrs lost (per table above)

Crude PYLL rate per 100,000 = sum of all deaths in each age group X yrs lost X 100,000 / estimated population

Crude cause-specific PYLL rate per 100,000 = sum of all deaths in each age group due to specific cause X yrs lost X 100,000 / estimated population [19]

Source: Statistics Canada, Vital Statistics, Death Data Base and Demography Division (population estimates); ISQ

Disclosures

Exclusions: Non-residents of Canada, deaths of Canadians whose province or territory of residence was unknown, and deaths for which the age of deceased was unknown, are excluded from the deaths and population estimates used in the numerator and denominator

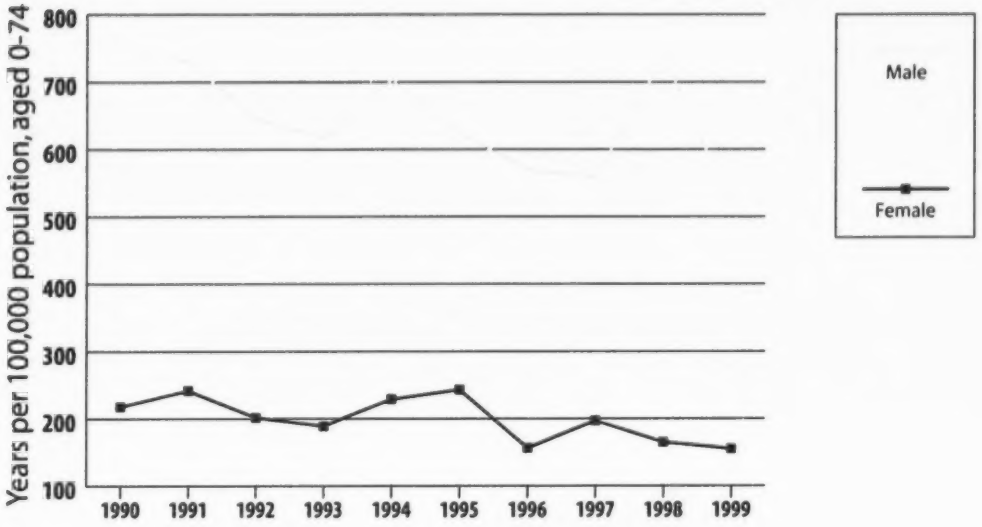
Limitations: N/A

Departures from PIRC Requirements: None

112 Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada. From 1979 to 1999, the underlying cause of death was coded using ICD-9; beginning with 2000, the underlying cause of death will be coded using ICD-10, thus introducing discontinuity to the trend data.

Potential Years of Life Lost due to Acute Myocardial Infarction
Nova Scotia by Sex, 1990 - 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division.

Potential Years of Life Lost Due to All Stroke

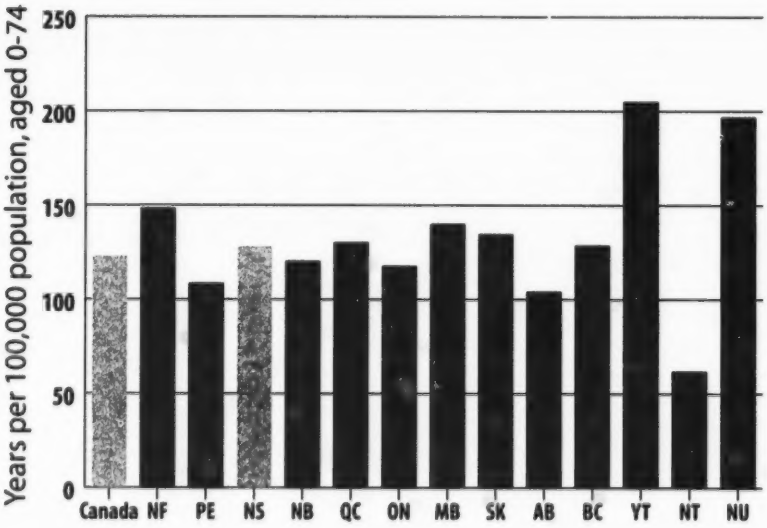
Definition

Potential years of life lost (PYLL) is the number of years of life "lost" when a person dies "prematurely" from any cause – defined as dying before age 75 expressed as a rate per 100,000 people. A person dying at age 25, for example, has lost 50 potential years of life.

PYLLs can also be estimated for a specific cause, in which case the indicator measures the number of years of life "lost" when a person dies before age 75 due to a cause like injury, cancer, AMI or stroke.

Potential years of life lost reflects the additional years a person could have lived had they not developed a particular illness. If, on average, people are expected to live 75 years, and someone dies at age 55, then 20 potential years of life have been lost.

Potential Years of Life Lost due to All Stroke
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

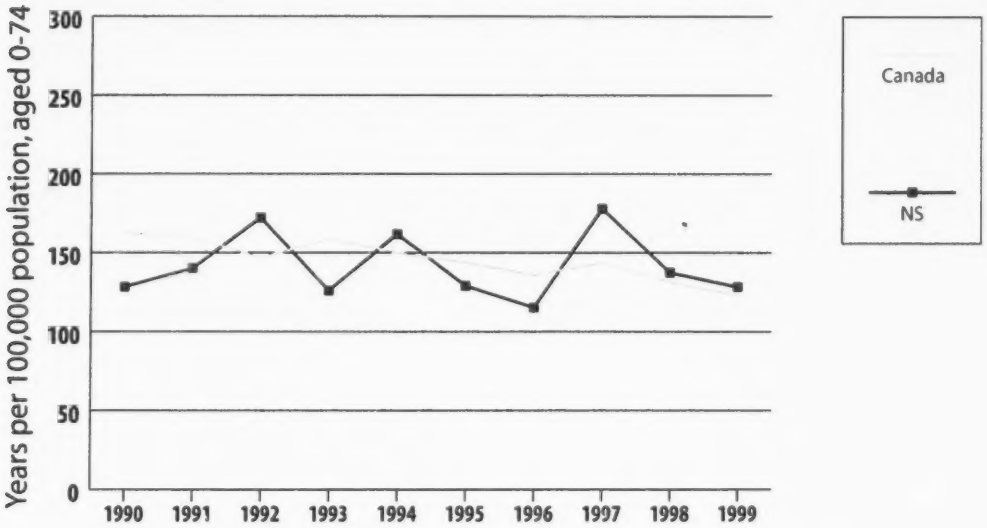
114 Significance – Rationale and Notes for Interpretation

The most widely used indicator based on mortality rates is life expectancy. It measures average expectation of life, and therefore reflects both changing lengths of life for the very old, and changes in mortality rates for the non-elderly. PYLL is a complementary indicator focusing on mortality among the non-elderly. It reflects the level of success in preventing premature (and therefore presumably preventable or postponable) loss of life, with its consequent loss of social and economic productivity. It is an overall indicator of population health and well being, and effectiveness of preventive programs.

It should be noted that, at old ages, co-morbidity becomes very frequent and death is often the result of a complex process. This can make PYLL more meaningful for diseases that can be identified as the sole cause of death and for those that kill at an early age. Unfortunately, PYLL is only based on single causes of death statistics.

Note: In the 1970s and 1980s, Canada PYLL was based on age < 70. Other cutoffs have been used by different countries and at different points in time. Any work done now on PYLL based on < age 75 will differ from published data on PYLL from most previous Canadian sources and should not be compared with each other. The choice of age 70 or 75 is arbitrary, and does not greatly affect time trends or inter-provincial comparisons.

Potential Years of Life Lost due to All Stroke
Nova Scotia vs Canada, 1990 - 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

Technical Specifications

Numerator: Deaths of persons under exact age 75, by age group, sex and cause. Take the midpoint in each age group, subtract from 75 and multiply the number of deaths in that age group disaggregated by sex and cause of death. This represents PYLL.

Denominator: Population estimate

Calculation: Formula is as follows:

Age group	Yrs lost
0-1	74.9
1-4	72.0
5-9	67.5
10-14	62.5
15-19	57.5
20-24	52.5
25-29	47.5
30-34	42.5
35-39	37.5
40-44	32.5
45-49	27.5
50-54	22.5
55-59	17.5
60-64	12.5
65-69	7.5
70-74	2.5

Total PYLL = sum of all deaths in each age group X yrs lost (per table above)

Crude PYLL rate per 100,000 = sum of all deaths in each age group X yrs lost X 100,000 / estimated population

Crude cause-specific PYLL rate per 100,000 = sum of all deaths in each age group due to specific cause X yrs lost X 100,000 / estimated population [30]

Source: Statistics Canada, Vital Statistics, Death Data Base and Demography Division (population estimates); ISQ

Disclosures

Exclusions: Non-residents of Canada, deaths of Canadians whose province or territory of residence was unknown, and deaths for which the age of deceased was unknown, are excluded from the deaths and population estimates used in the numerator and denominator

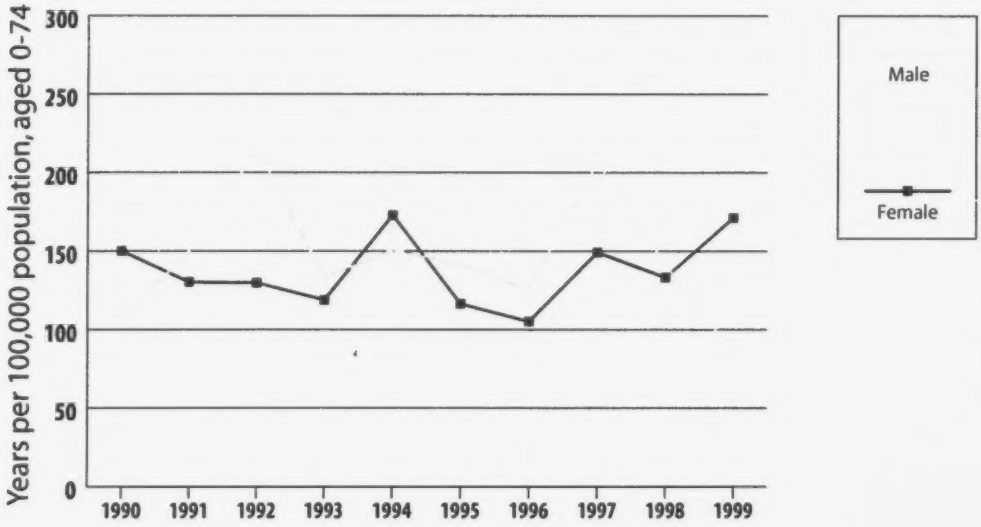
Limitations: N/A

Departures from PIRC Requirements: None

116 Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada. From 1979 to 1999, the underlying cause of death was coded using ICD-9; beginning with 2000, the underlying cause of death will be coded using ICD-10, thus introducing discontinuity to the trend data.

Potential Years of Life Lost due to All Stroke
Nova Scotia by Sex, 1990 - 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division.

Potential Years of Life Lost Due to Unintentional Injuries

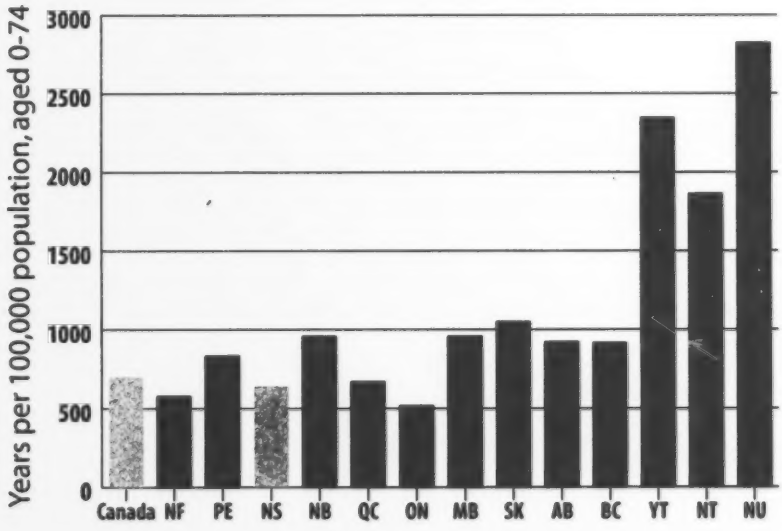
Definition

Potential years of life lost (PYLL) is the number of years of life "lost" when a person dies "prematurely" from any cause – defined as dying before age 75 expressed as a rate per 100,000 people. A person dying at age 25, for example, has lost 50 potential years of life.

PYLLs can also be estimated for a specific cause, in which case the indicator measures the number of years of life "lost" when a person dies before age 75 due to a cause like injury, cancer, AMI or stroke.

Potential years of life lost reflects the additional years a person could have lived had they not developed a particular illness. If, on average, people are expected to live 75 years, and someone dies at age 55, then 20 potential years of life have been lost.

Potential Years of Life Lost due to Unintentional Injuries
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

118 Significance – Rationale and Notes for Interpretation

The most widely used indicator based on mortality rates is life expectancy. It measures average expectation of life, and therefore reflects both changing lengths of life for the very old, and changes in mortality rates for the non-elderly. PYLL is a complementary indicator focusing on mortality among the non-elderly. It reflects the level of success in preventing premature (and therefore presumably preventable or postponable) loss of life, with its consequent loss of social and economic productivity. It is an overall indicator of population health and well being, and effectiveness of preventive programs.

It should be noted that, at old ages, co-morbidity becomes very frequent and death is often the result of a complex process. This can make PYLL more meaningful for diseases that can be identified as the sole cause of death and for those that kill at an early age. Unfortunately, PYLL is only based on single causes of death statistics.

Note: In the 1970s and 1980s, Canada PYLL was based on age < 70. Other cutoffs have been used by different countries and at different points in time. Any work done now on PYLL based on < age 75 will differ from published data on PYLL from most previous Canadian sources and should not be compared with each other. The choice of age 70 or 75 is arbitrary, and does not greatly affect time trends or inter-provincial comparisons.

Potential Years of Life Lost due to Unintentional Injuries
Nova Scotia vs Canada, 1990 - 1999

Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

Technical Specifications

Numerator: Deaths of persons under exact age 75, by age group, sex and cause. Take the midpoint in each age group, subtract from 75 and multiply the number of deaths in that age group disaggregated by sex and cause of death. This represents PYLL.

Denominator: Population estimate

Calculation: Formula is as follows:

Age group	Yrs lost
0-1	74.9
1-4	72.0
5-9	67.5
10-14	62.5
15-19	57.5
20-24	52.5
25-29	47.5
30-34	42.5
35-39	37.5
40-44	32.5
45-49	27.5
50-54	22.5
55-59	17.5
60-64	12.5
65-69	7.5
70-74	2.5

Total PYLL = sum of all deaths in each age group X yrs lost (per table above)

Crude PYLL rate per 100,000 = sum of all deaths in each age group X yrs lost X 100,000 / estimated population

Crude cause-specific PYLL rate per 100,000 = sum of all deaths in each age group due to specific cause X yrs lost X 100,000 / estimated population[21]

Source: Statistics Canada, Vital Statistics, Death Data Base and Demography Division (population estimates); ISQ

Disclosures

Exclusions: Non-residents of Canada, deaths of Canadians whose province or territory of residence was unknown, and deaths for which the age of deceased was unknown, are excluded from the deaths and population estimates used in the numerator and denominator

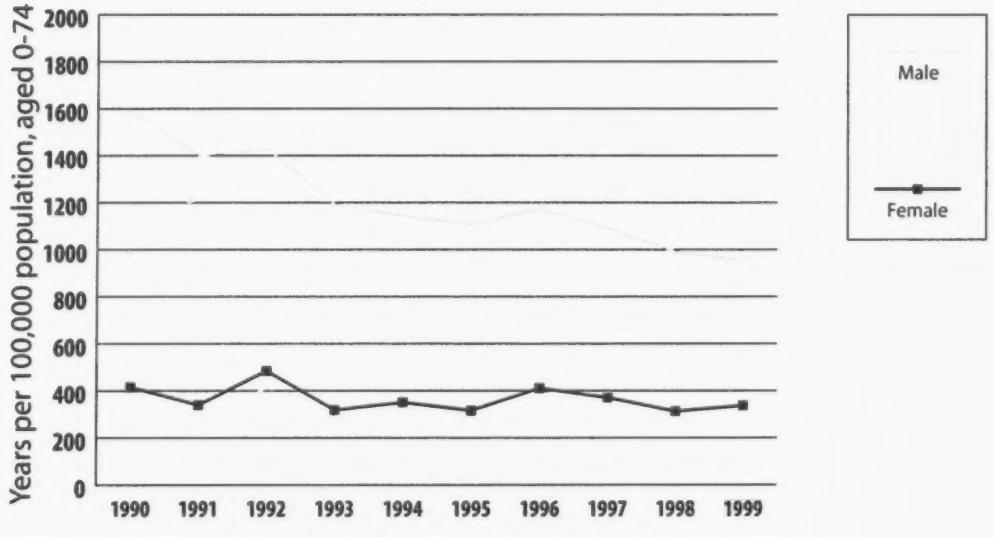
Limitations: N/A

Departures from PIRC Requirements: None

120 Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada. From 1979 to 1999, the underlying cause of death was coded using ICD-9; beginning with 2000, the underlying cause of death will be coded using ICD-10, thus introducing discontinuity to the trend data.

Potential Years of Life Lost due to Unintentional Injuries
Nova Scotia by Sex, 1990 - 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division.

Potential Years of Life Lost Due to Suicide

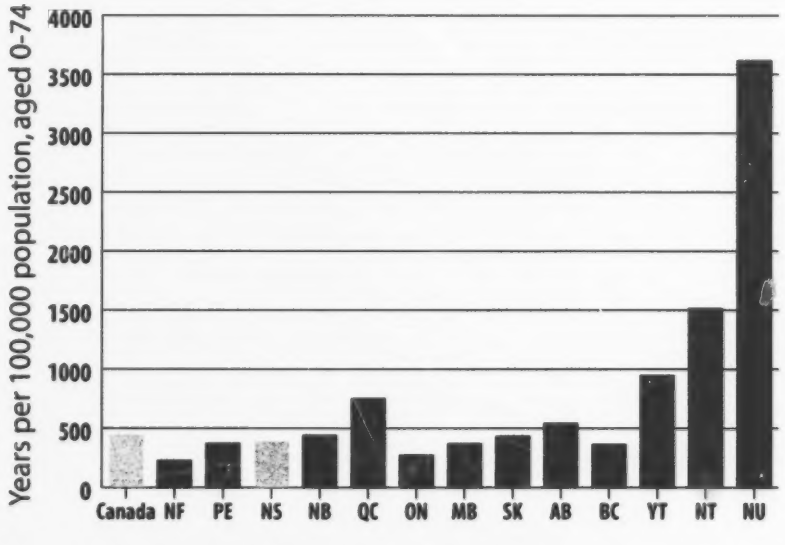
Definition

Potential years of life lost (PYLL) is the number of years of life "lost" when a person dies "prematurely" from any cause – defined as dying before age 75 expressed as a rate per 100,000 people. A person dying at age 25, for example, has lost 50 potential years of life.

PYLLs can also be estimated for a specific cause, in which case the indicator measures the number of years of life "lost" when a person dies before age 75 due to a cause like injury, cancer, AMI or stroke.

Potential years of life lost reflects the additional years a person could have lived had they not developed a particular illness. If, on average, people are expected to live 75 years, and someone dies at age 55, then 20 potential years of life have been lost.

Potential Years of Life Lost due to Suicide
Canada and Provinces, 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

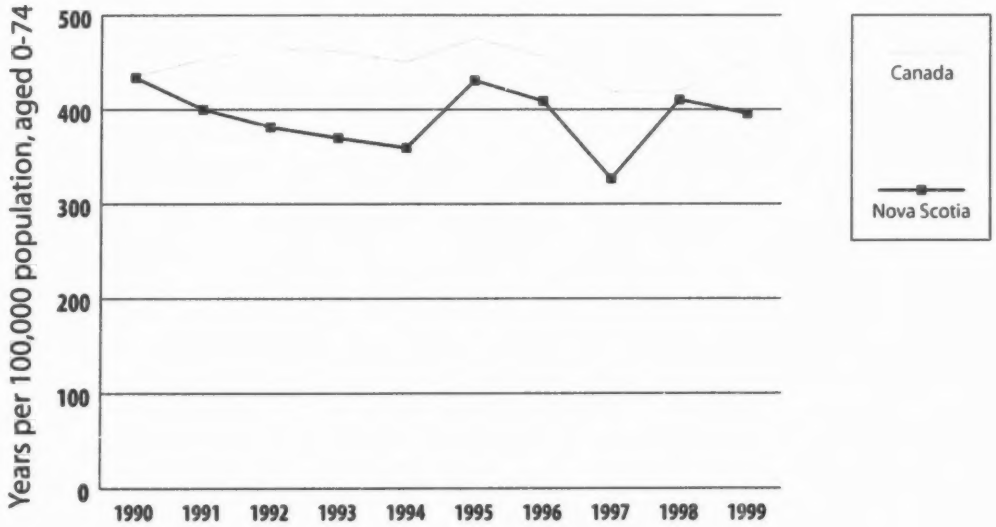
122 Significance – Rationale and Notes for Interpretation

The most widely used indicator based on mortality rates is life expectancy. It measures average expectation of life, and therefore reflects both changing lengths of life for the very old, and changes in mortality rates for the non-elderly. PYLL is a complementary indicator focusing on mortality among the non-elderly. It reflects the level of success in preventing premature (and therefore presumably preventable or postponable) loss of life, with its consequent loss of social and economic productivity. It is an overall indicator of population health and well being, and effectiveness of preventive programs.

It should be noted that, at old ages, co-morbidity becomes very frequent and death is often the result of a complex process. This can make PYLL more meaningful for diseases that can be identified as the sole cause of death and for those that kill at an early age. Unfortunately, PYLL is only based on single causes of death statistics.

Note: In the 1970s and 1980s, Canada PYLL was based on age < 70. Other cutoffs have been used by different countries and at different points in time. Any work done now on PYLL based on < age 75 will differ from published data on PYLL from most previous Canadian sources and should not be compared with each other. The choice of age 70 or 75 is arbitrary, and does not greatly affect time trends or inter-provincial comparisons.

Potential Years of Life Lost due to Suicide
Nova Scotia vs Canada, 1990 - 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division; ISQ.

Technical Specifications

Numerator: Deaths of persons under exact age 75, by age group, sex and cause. Take the midpoint in each age group, subtract from 75 and multiply the number of deaths in that age group disaggregated by sex and cause of death. This represents PYLL.

Denominator: Population estimate

Calculation: Formula is as follows:

Age group	Yrs lost
0-1	74.9
1-4	72.0
5-9	67.5
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15-19	57.5
20-24	52.5
25-29	47.5
30-34	42.5
35-39	37.5
40-44	32.5
45-49	27.5
50-54	22.5
55-59	17.5
60-64	12.5
65-69	7.5
70-74	2.5

Total PYLL = sum of all deaths in each age group X yrs lost (per table above)

Crude PYLL rate per 100,000 = sum of all deaths in each age group X yrs lost X 100,000 / estimated population

Crude cause-specific PYLL rate per 100,000 = sum of all deaths in each age group due to specific cause X yrs lost X 100,000 / estimated population [42]

Source: Statistics Canada, Vital Statistics, Death Data Base and Demography Division (population estimates); ISQ

Disclosures

Exclusions: Non-residents of Canada, deaths of Canadians whose province or territory of residence was unknown, and deaths for which the age of deceased was unknown, are excluded from the deaths and population estimates used in the numerator and denominator

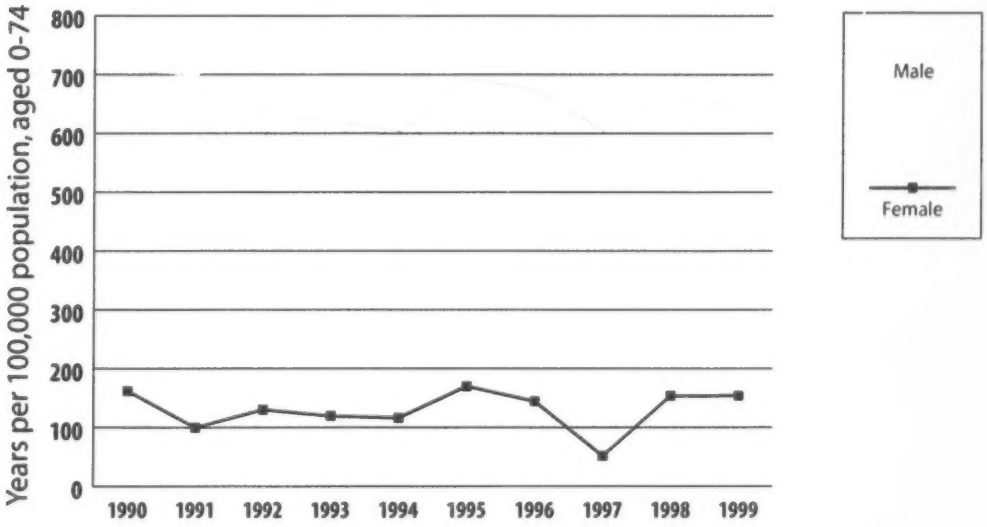
Limitations: N/A

Departures from PIRC Requirements: None

124 Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada. From 1979 to 1999, the underlying cause of death was coded using ICD-9; beginning with 2000, the underlying cause of death will be coded using ICD-10, thus introducing discontinuity to the trend data.

Potential Years of Life Lost due to Suicide
Nova Scotia by Sex, 1990 - 1999



Source: Statistics Canada, Vital Statistics, Death Database and Demography Division.

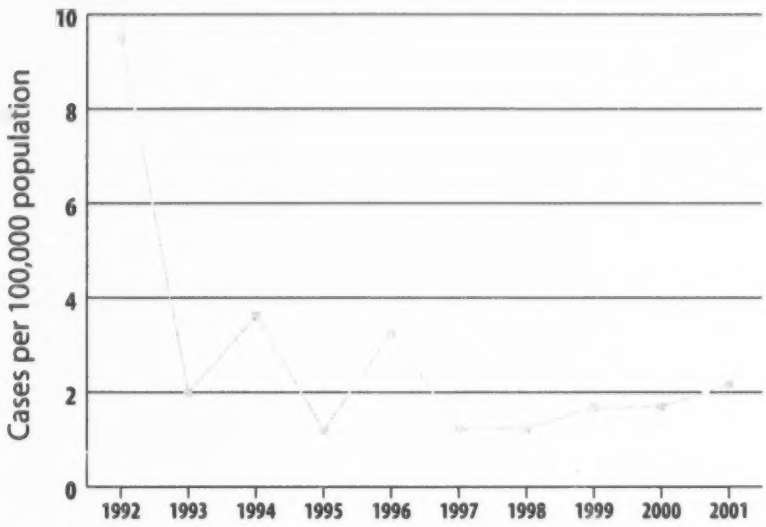
Invasive Meningococcal Disease Incidence Rate

Definition

The rate of new cases reported by year, age and serogroup.

A confirmed case is defined as invasive disease with laboratory confirmation of infection: isolation of Neisseria meningitidis from a normally sterile site (blood, cerebrospinal fluid, joint, pleural or pericardial fluid) or demonstration of N. meningitidis antigen in cerebrospinal fluid.

Invasive Meningococcal Disease Incidence Rate, Age < 20, Nova Scotia, 1992 - 2001



Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Significance – Rationale and Notes for Interpretation

A new generation of very effective protein conjugate vaccines is now available against Group C disease which can be given to infants as young as two months of age. The National Advisory Committee on Immunization (NACI) recommends three doses of this vaccine at two, four and six months of age for routine immunization. Other meningococcal conjugate vaccines, which are anticipated to confer long-term immunity against multiple serogroups, are under development. Epidemiological data on invasive meningococcal disease will enable evidence-based program planning and evaluation. There is a high level of public interest in this disease, as well as strong potential for significant reduction in incidence over time. Most cases of this disease occur in the 0-19 age group, and immunization programs generally focus on this group.

Technical Specifications

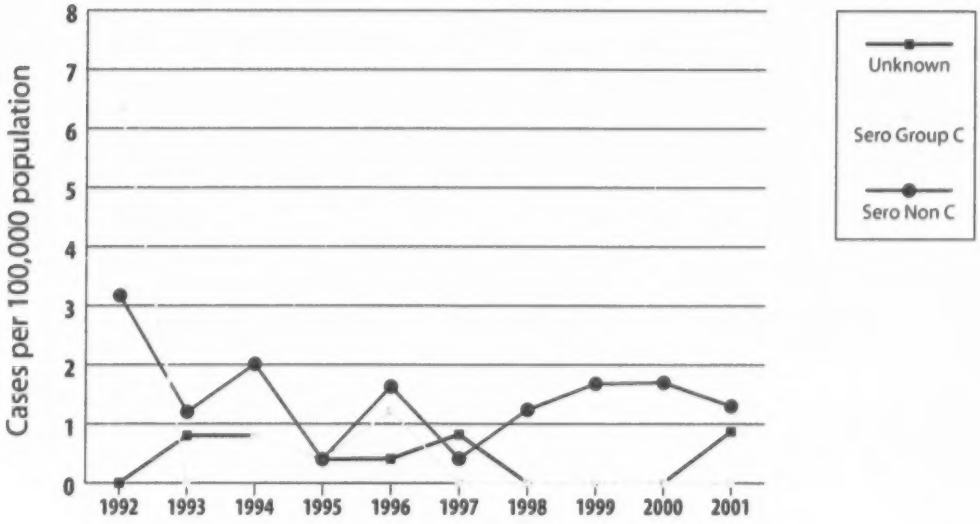
Numerator: Total number of cases under 20 years of age

Denominator: Total population under 20 years of age

Calculation: Numerator/denominator x 100,000

Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Invasive Meningococcal Disease Incidence Rate, Age < 20
Nova Scotia by Serogroup, 1992 - 2001



Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Disclosures

Exclusions: None

Limitations: Data for 2000 and 2001 are provisional; validation and verification in progress.

Departures from PIRC Requirements:

Plans for Future Reporting

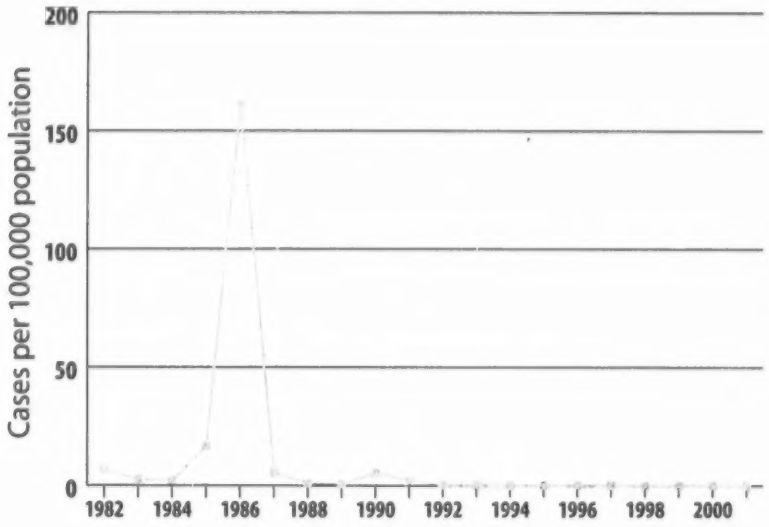
This indicator will continue to be reported in the standard manner as defined by Health Canada.

Measles Incidence Rate

Definition

The rate of new cases reported by year. A confirmed case is defined as laboratory confirmation of infection in the absence of recent immunization with measles-containing vaccine: isolation of measles virus from an appropriate clinical specimen or significant rise in measles specific antibody titre between acute and convalescent sera or positive serologic test for measles IgM using a recommended assay or clinical case in a person who is epidemiologically linked to a laboratory confirmed case.

Measles Incidence Rate
Nova Scotia, 1982 - 2001



Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Significance – Rationale and Notes for Interpretation

The Pan-American Health Organization adopted the goal of measles elimination by 2000; it is also the only national goal and objective that has been adopted by all provinces and territories. Two doses of measles vaccine are required for complete protection; the first dose is given at 12 months and the second dose prior to school entry, at either 18 months or 4-6 years of age. In the absence of global eradication, maintaining measles elimination requires ongoing, enhanced surveillance and continued high immunization coverage rates.

Technical Specifications

Numerator: Total number of cases

Denominator: Total population

Calculation: Numerator/denominator x 100,000

Source: Notifiable Disease Reporting and Enhanced Surveillance System, Health Canada

Disclosures

Exclusions: None

Limitations: Reporting should take into consideration the fact that the nature of this disease is such that it occurs as a periodic outbreak, which makes data subject to significant fluctuation and misinterpretation.

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Health Canada.

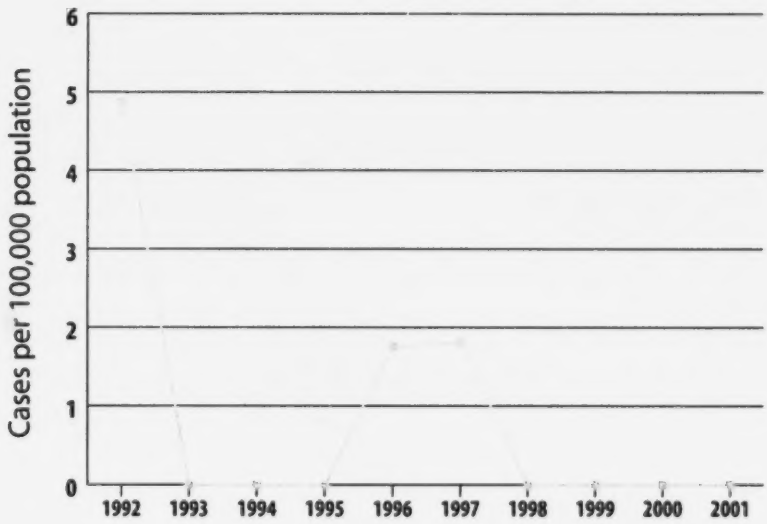
Haemophilus Influenza B (Invasive) (HIB) Incidence Rate

Definition

The rate of new cases reported by year in children under 5.

A confirmed case is defined as invasive disease with laboratory confirmation of infection in the absence of recent immunization with Hib-containing vaccine: isolation of H. influenzae type b from a normally sterile site or epiglottis in a person with epiglottitis, or demonstration of H. influenzae type b antigen in cerebrospinal fluid. Invasive disease includes meningitis, bacteraemia, epiglottitis, pneumonia, pericarditis, septic arthritis, or empyema.

Haemophilus Influenzae B (Invasive) (Hib) Disease Incidence Rate in Children, Age < 5 , Nova Scotia, 1992 - 2001



Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Significance – Rationale and Notes for Interpretation

Hib was the most common cause of bacterial meningitis and a leading cause of other serious invasive infections in children prior to the introduction of Hib vaccines. Vaccine preventable cases are now rare. Four doses of the vaccine are given in combination with diphtheria, pertussis, tetanus, and polio before the age of 2 years. Other vaccines which could potentially interfere with the immunogenicity of Hib vaccine are being introduced (e.g. conjugate pneumococcal and meningococcal vaccines, and hepatitis B).

Technical Specifications

Numerator: Number of cases in children < 5 years of age.

Denominator: Number of children < 5 years

Calculation: Numerator/denominator x 100, 000

Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Disclosures

Exclusions: None.

Limitations: N/A

Departures from PIRC Requirements: Data were not available to report whether or not new cases of Haemophilus Influenzae B (Invasive) had been vaccinated.

Plans for Future Reporting

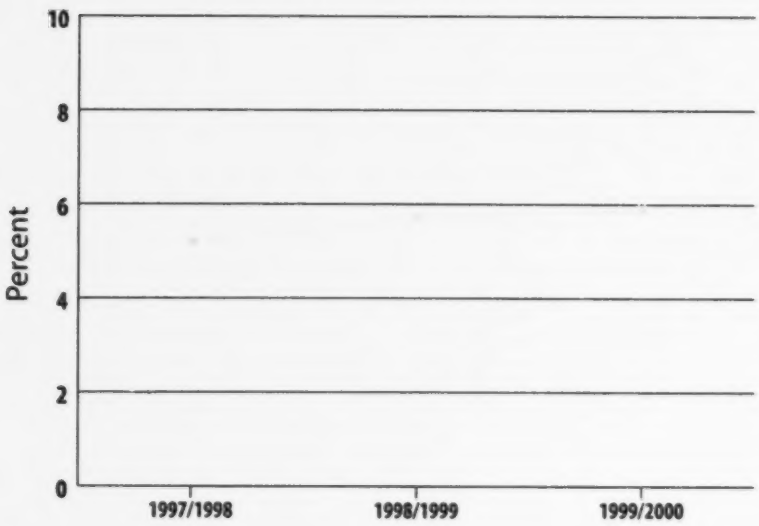
This indicator will continue to be reported in the standard manner as defined by Health Canada.

Prevalence of Diabetes

Definition

The number of individuals in the age standardized population aged 20 and over with the disease at a specific point in time.

Crude Prevalence of Diabetes
Nova Scotia, 1997/1998 – 1999/2000



Source: National Diabetes Surveillance System.
Data from 1998/99 and 1999/2000 are preliminary as there is not yet a complete 730 days of follow up data available for each year.

Significance – Rationale and Notes for Interpretation

The period prevalence of diabetes gives an idea of the importance or burden of this disease at a given time and is widely used in public health monitoring and planning.

The case is defined using two administrative data sources: hospital discharge, physician billing. A person is defined as having diabetes if there are two physician claims with a diagnosis for diabetes (e.g. an ICD-9 code of 250) within 2 years (730 days) of one another or there is a hospitalization for diabetes (e.g. an ICD-9 code of 250) within the first three recorded diagnosis. The case date is the earliest of these dates.

The above rule has only been validated for persons 20 years of age and older. Validation work is proceeding for the younger age groups and it is hoped to be able to be included soon.

Due to provisional nature of this initial data on diabetes, comparisons between jurisdictions should not be made.

Numerator: Number of cases in persons 20 years of age and older

Denominator: Estimated population using health registry data for those persons 20 years and older

Exclusions: Persons younger than 20 year of age, Currently only 8 provinces and 1 territory are included.(Excluded: Nunavut, Northwest Territories, New Brunswick, Newfoundland and Labrador)

Calculation: Numerator / Denominator X 100

Source: National Diabetes Surveillance System (NDSS) (uses hospital discharge, physician billing and health insurance registry data)

Data Sources

There are three data sources used by the NDSS: Health Insurance Registry File, Hospital Discharge Data and Physician Billing Information. A capacity assessment was completed to ensure that the majority of provinces and territories have access to each of the data sources and that the requirements for each data source were met.

Health Insurance Registry

The registry is used as the population base. A person must be eligible for the provincial /territorial health insurance in the year of analysis to be considered. The person must be eligible at the time the person is diagnosed with diabetes. The person is only included in the analysis up to the last date for insurance coverage (e.g. the person moves out of province or dies). The registry is used to determine the exposure. For example, a person has been living in a pt for a number of years but dies on July first. That person only is considered to have 6 months (approximately 180 days) observed in that year.

One of the necessities for the NDSS was that the registry ID be a 'life time' identifier. That is, if a person moved out of province or dies, their number would never be reassigned. This is crucial due to the case Definition being utilized and in order to do any sort of longitudinal analysis. It is this requirement that has limited the starting point for the national analysis at the calendar year 1995/1996.

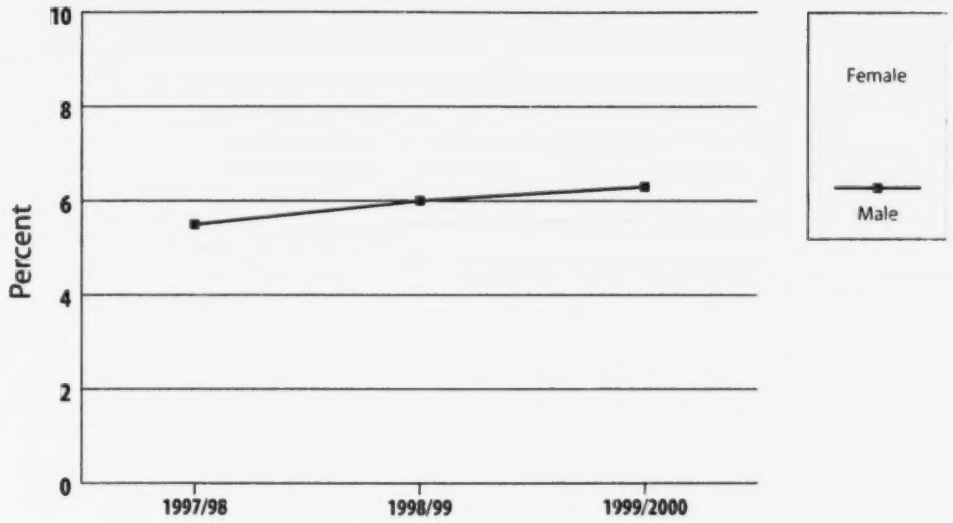
Hospital Discharge

The first three diagnosis codes from the hospital data are used and are examined for an ICD-9 (or ICD-9CM) code of 250.

Physician Claims

In determining a diagnosis of diabetes, the diagnosis code is examined for occurrences of the ICD-9 code of 250.

Crude Prevalence of Diabetes
Nova Scotia by Sex, 1997/1998 - 1999/2000



Source: National Diabetes Surveillance System.
Data from 1998/99 and 1999/2000 are preliminary as there is not yet a complete 730 days of follow up data available for each year.

Disclosures

Exclusions: Persons not insured at some time during the fiscal year; persons under 20

Limitations: Data from 1998-1999 and 1999-2000 are preliminary data as there is not yet a complete 730 days of follow-up available for each of these years.

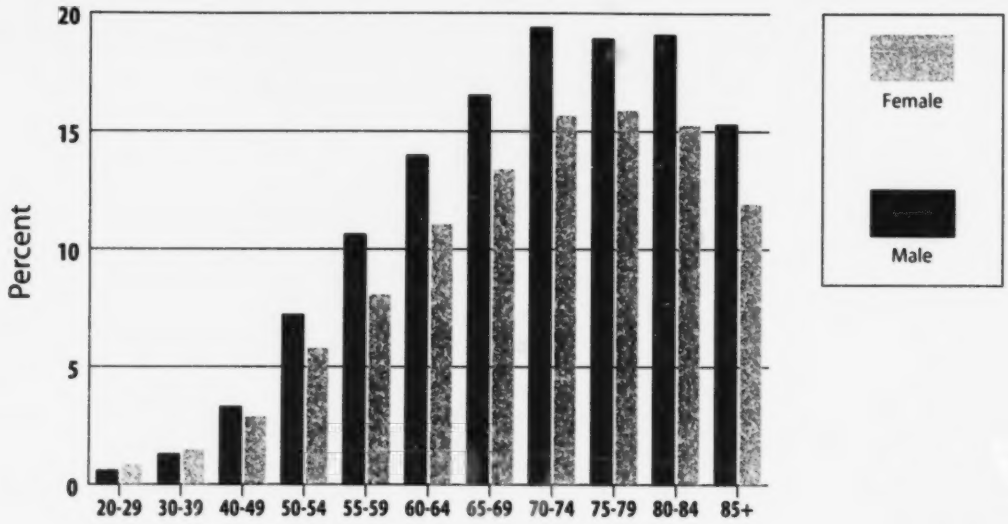
NDSS is a new system, and, with the first years of data, rising prevalence is in part due to the incomplete detection of all existing cases when only two or three years of data are available; it is expected that up to five years of complete data will be needed to ensure that all those with diabetes prior to system implementation have been appropriately classified. Data is age standardized to the 1991 Canadian census. Further, NDSS rates only reflect diagnosed cases of diabetes and do not account for any cases that have not yet been diagnosed which may result in related underreporting. Due to provisional nature of this initial data on diabetes, comparisons between jurisdictions should not be made. Each province and territory has its own collection and data management protocols. As much as possible, variation in these protocols is identified and documented. Differences in period prevalence among provinces and territories could be partially attributable to different collection practices. Diabetes data have not been audited by the Office of the Auditor General.

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by National Diabetes Surveillance System and the Nova Scotia Department of Health.

Crude Prevalence of Diabetes
Nova Scotia by Sex and Age Groups, 1999/2000



Source: National Diabetes Surveillance System.
Data from 1999/2000 are preliminary as there is not yet a complete 730 days of follow up data available for each year.

Quality of Service

Waiting Times for Key Diagnostic and Treatment Services

- **Cardiac Wait Times**
- **Radiation Therapy Wait Times**
- **Patient Satisfaction**

Hospital Re-Admissions for Selected Conditions

- **Acute Myocardial Infarction**
- **Pneumonia**

Access to 24/7 First Contact Health Services

- **Ground Ambulance Response Times for Emergency Calls**

Home and Community Care Services

- **Home Care Admissions**
- **Percent Receiving Homemaking, Nursing or Respite Services**
- **Ambulatory Care Sensitive Conditions**

Public Health Surveillance and Protection

- **Tuberculosis**
- **HIV**
- **Verotoxogenic E. Coli**
- **Chlamydia**
- **Exposure to Environmental Tobacco Smoke**

Health Promotion and Disease Prevention

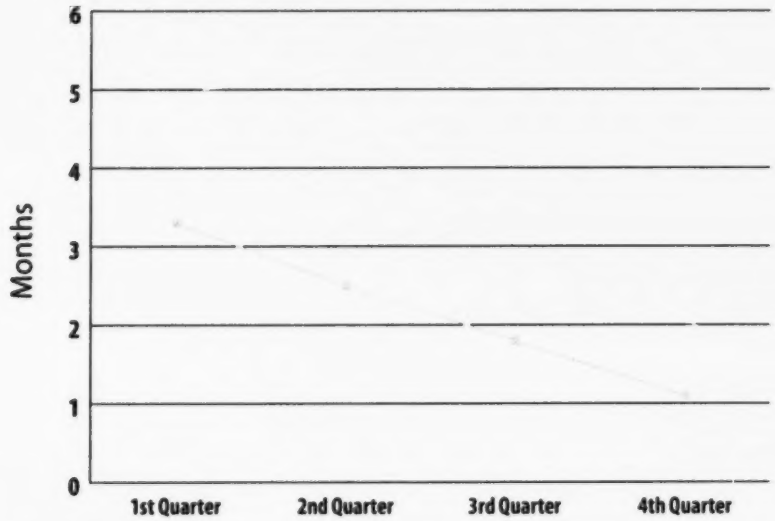
- **Smoking**
- **Physical Activity**
- **Body Mass Index**
- **Immunization for Influenza for 65+**

136 Cardiac Wait Times

Definition

1. Estimated number of months to clear current wait list for CABG
2. Median number of days waited between cardiac catheterization and CABG surgery for adults (aged 20 and older) who received CABG surgery in the period in question.
3. Percent of adults (aged 20 and older) who received CABG surgery in the period in question and who waited ≤14 days, 15-42 days, 43-180 days, >180 days, between cardiac catheterization and CABG surgery.

Months to Clear Current Wait List for Coronary Artery Bypass Graft Assuming No New Referrals , Nova Scotia, 2001/2002



	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Months to Clear	3.3	2.5	1.8	1.1
# Waiting	156	134	117	83
# Cases/Month	47	54	64	79

Source: Cardiovascular Surgery Division, QEII Health Sciences Centre.

Significance – Rationale and Notes for Interpretation

Systematic collection and comparison of wait time data is complex. Historically, different groups have defined and monitored wait times in different ways. For example, some calculate wait times from when a person first visits a family doctor. Others start the clock when the patient is assessed by a specialist or when test results confirm the need for further treatment or from some other point. There are advantages and disadvantages to each approach. Nonetheless, such differences have to be reconciled if meaningful comparisons between jurisdictions are to

be made. Wait times for coronary artery bypass graft (CABG) surgery are measured by tracking the number of days waited between cardiac catheterization and CABG surgery, for patients who received surgery in a given period. Based on the data currently available across the country, this measure was deemed by experts to be the most appropriate for cross-jurisdiction comparisons at this time. This is an important, but certainly not the only, wait that a person might experience between development to resolution of cardiac symptoms. As systems for monitoring wait times are further developed, it is expected that more comprehensive reporting on waiting times will be possible.

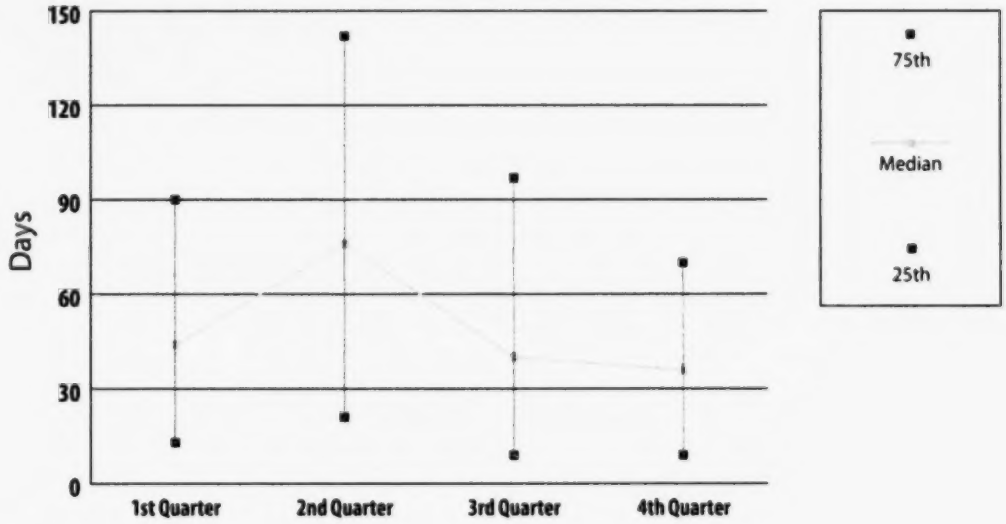
A Wait time categories defined by PIRC do not reflect the four urgency queues that are actively managed by cardiac surgery and cardiology at the QEII in Halifax.

B 'Time to clear wait list' takes into account patients who were cathed before 1 Apr 2001 and had not had their surgery by that date. Further, time to clear the wait list is an artificial statistic that assumes no new referrals during the time take to clear the wait list.

C The data presented does not include emergent cases (no delay) or urgent cases (requiring surgery within 24 hours).

D The rate of isolated CABG in Nova Scotia is 67.8 per 100,000 (age and sex adjusted to the Canadian population using 1996 Census data). 85.8% of isolated CABG cases are elective cases waiting in-hospital or at home.

Median Wait Times for Coronary Artery Bypass Graft
Nova Scotia, 2001/2002



Source: Cardiovascular Surgery Division, QEII Health Sciences Centre.

Months to Clear Current Wait List

Numerator: Total # of adults (aged 20 and over) who have received cardiac catheterization and been designated by a physician as needing CABG surgery, but have not yet received their surgery on the last day of the period in question.

Denominator: The average number of CABGs completed per month within the specified period

Source: The data reported is derived from the wait time database maintained by the Maritime Heart Centre, Cardiovascular Surgery Division, QEII Health Sciences Centre

Cases included represent:

- Patients residing in Nova Scotia but treated outside of province have not been included.
- Time to clear wait lists assumes no new referrals.
- Isolated CABG surgery, uncomplicated by any other procedure
- Patients residing in Nova Scotia
- Includes elective cases waiting at home
- Included non-urgent cases waiting in-house (in hospital)
- Excluded emergent cases (no delay) and urgent cases (requiring surgery within 24 hours)
- Some cases included were delayed/deferred for a trial of medical management

Median Number of Days Waited

Source: The data reported is derived from the wait time database maintained by the Maritime Heart Centre, Cardiovascular Surgery Division, QEII Health Sciences Centre

- Cases undergoing CABG surgery in the fiscal 2001-2002 year
- Isolated CABG surgery, uncomplicated by any other procedure
- Patients residing in Nova Scotia
- Includes elective cases waiting at home
- Included non-urgent cases waiting in-house (in hospital)
- Excluded emergent cases (no delay) and urgent cases (requiring surgery within 24 hours)
- Some cases included were delayed/deferred for a trial of medical management
- Patients residing in Nova Scotia but treated outside of province have not been included.

Percent Distribution of Wait Times

Numerator: Number of adults (aged 20 and older) who received CABG surgery in the period in question and who waited ≤14 days, 15-42 days, 43-180 days, >180 days, between cardiac catheterization and CABG surgery.

Denominator: Total number of adults who received CABG surgery in the period in question.

Source: The data reported is derived from the wait time database maintained by the Maritime Heart Centre.Cardiovascular Surgery Division, QEII Health Sciences Centre

Cases included represent:

- Cases undergoing CABG surgery in the fiscal 2001-2002 year
- Isolated CABG surgery, uncomplicated by any other procedure
- Patients residing in Nova Scotia
- Includes elective cases waiting at home
- Included non-urgent cases waiting in-house (in hospital)
- Excluded emergent cases (no delay) and urgent cases (requiring surgery within 24 hours)
- Some cases included were delayed/deferred for a trial of medical management
- Patients residing in Nova Scotia but treated outside of province have not been included.
- 93.7% of isolated CABG cases performed at the QEII are residents of Nova Scotia. 5.85% of isolated CABG cases performed at the QEII are residents of the Atlantic provinces excluding Nova Scotia. An additional 0.5% of isolated CABG cases are residents outside of the Atlantic provinces.

Disclosures (applicable to all 3 indicators)

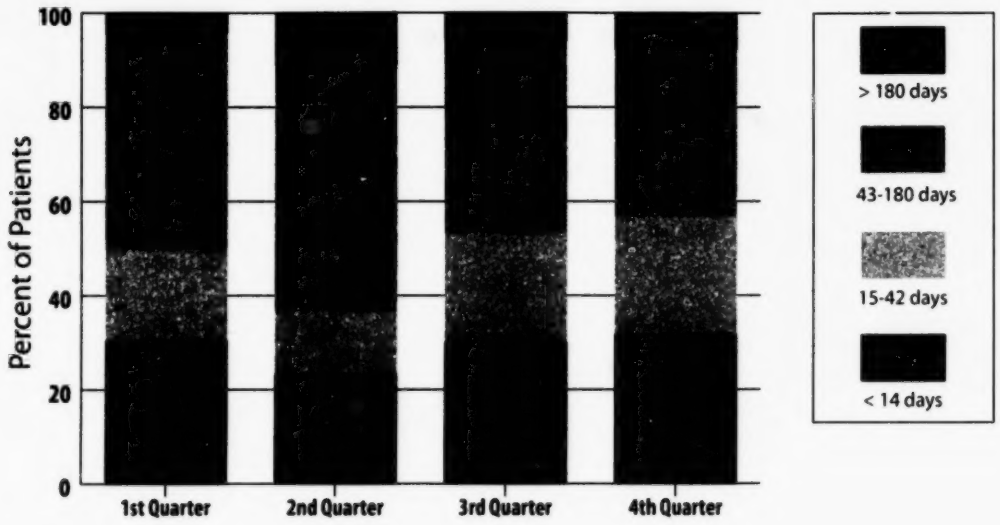
Exclusions: The data presented does not include emergent cases (no delay) or urgent cases (requiring surgery within 24 hours).

Limitations: Wait time categories defined by PIRC do not reflect the four urgency queues that are actively managed by cardiac surgery and cardiology at the QEII in Halifax.

Departures from PIRC Requirements: The PIRC definition states: 'because of differences in urgency rating processes across the country, include all emergent and non-emergent CABG cases. If only non-emergent cases are tracked, report the percent of total CABG cases that they represent in the period in question in addition to the indicator." The Nova Scotia report, however, does not include emergent or urgent cases. The cases reported are in-house and elective CABG cases, which represent 85.8% of all isolated CABG cases.

The PIRC definition also states: "where possible, individuals should not be counted in the numerator if a decision has been made, either by the individual or his/her physician, not to proceed with surgery or to delay surgery for medical or other reasons."
The Nova Scotia report, however, does not exclude these cases. Some cases included may have been delayed/deferred for a trial of medical management.

Distribution of Wait Times for Coronary Artery Bypass Graft
Nova Scotia, 2001/2002



Source: Cardiovascular Surgery Division, QE II Health Sciences Centre.

Plans for Future Reporting

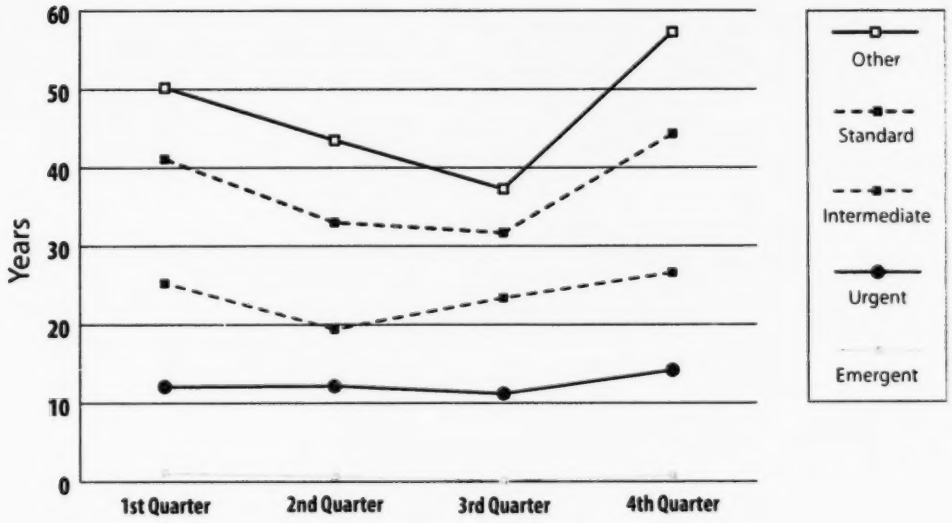
This indicator will continue to be reported as defined by PIRC, the Cardiovascular Surgery Division, QEII Health Sciences Centre and the Nova Scotia Department of Health.

Radiation Therapy Wait Times

Definition

Mean number of weeks from the time that the oncologist made a decision, in consultation with the patient, that radiation therapy was required and the date that radiation therapy commenced, for the period in question.

Wait Times for Radiation Therapy by Patient Priority
Capital District Health Authority, 2000/2001



Source: Radiation Therapy Department, QEII Health Sciences Centre.

Significance – Rationale and Notes for Interpretation

Systematic collection and comparison of wait time data is complex. Historically, different groups have defined and monitored wait times in different ways. For example, some calculate wait times from when a person first visits a family doctor. Others start the clock when the patient is assessed by a specialist or when test results confirm the need for further treatment or from some other point. There are advantages and disadvantages to each approach. Nonetheless, such differences have to be reconciled if meaningful comparisons between jurisdictions are to be made.

Numerator: Total number of patients who have been referred by an oncologist for radiation therapy but have not yet commenced therapy on the last day of the quarter in question

Denominator: The average number of patients starting radiation therapy each week during the quarter in question

Source: Radiation Therapy Department, QEII Health Sciences Centre

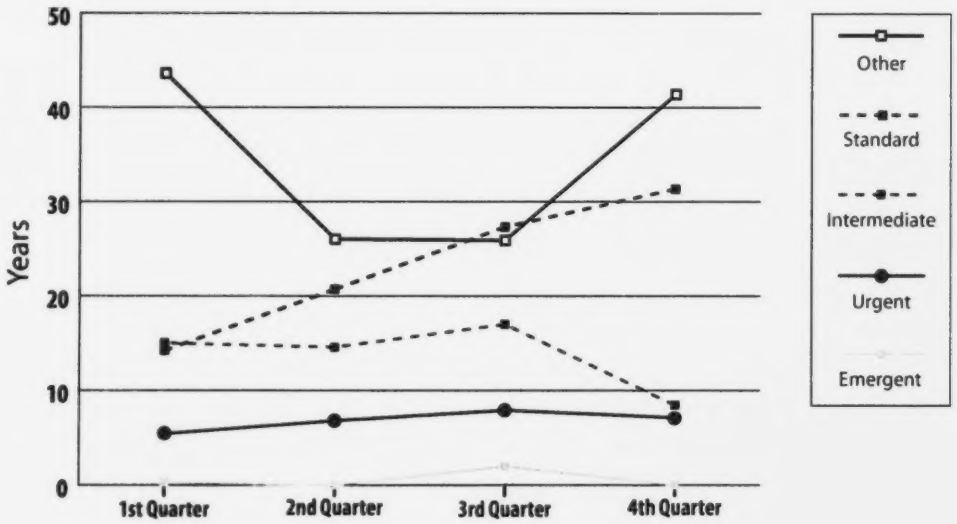
Disclosures

Exclusions: None

Limitations: None

Departures from PIRC Requirements: This indicator does not follow the specifications outlined b PIRC in its 2002 Proposal for Reporting. Due to current data collection systems, wait list times for breast and prostate cancer radiation therapy are not distinguishable as specific groups. The Office of the Auditor General of Nova Scotia has not reviewed the data source.

Wait Times for Radiation Therapy by Patient Priority
Cape Breton District Health Authority, 2000/2001



Source: Radiation Therapy Department, QEII Health Sciences Centre.

Plans for Future Reporting

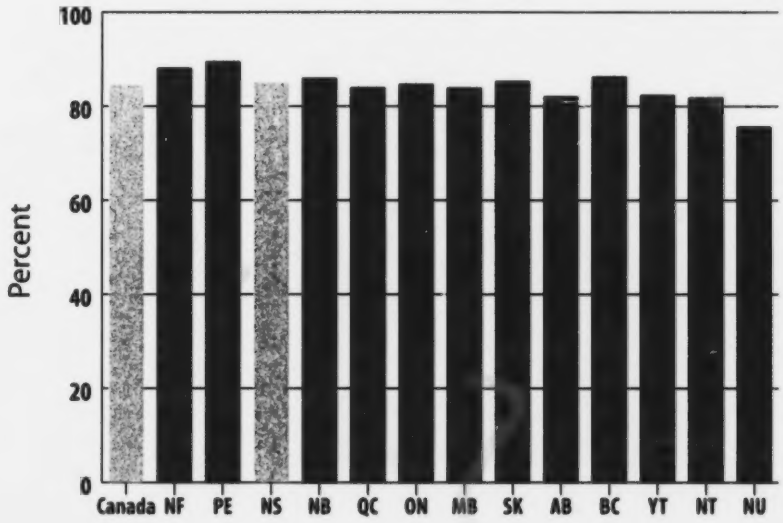
Modifications to the data collection means are in the planning stages to allow for future reporting of this indicator.

Patient Satisfaction

Definition

Percentages of the adult population who rate themselves as either very satisfied or somewhat satisfied with the way the following services were provided: (a) overall health care services received, (b) services received in a hospital, (c) services received from a family doctor or other physician, and (d) community-based services received.

Patient Satisfaction
Very or Somewhat Satisfied with Provision of Health Care Services Received in Past 12 Months, Canada and Provinces, 2000



Source: Statistics Canada, Canadian Community Health Survey.

Significance – Rationale and Notes for Interpretation

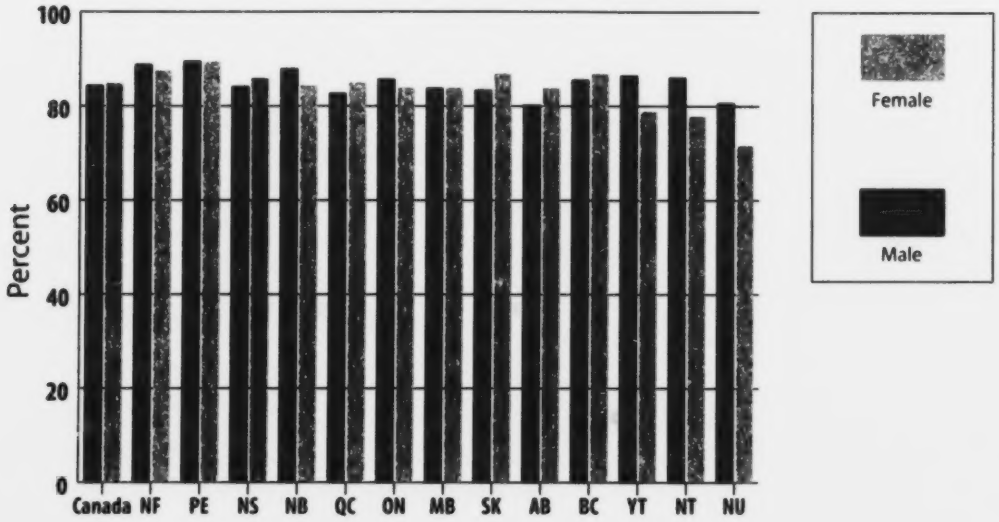
These indicators apply to individuals who have received health care services over a 12-month reference period. The individual's assessment of the quality of care received and the satisfaction with the services are measured. The indicators apply to individuals 15 years old and older living in private households.

Technical Specifications

For each service area, the two following questions were asked: Overall how would you rate the quality of health care received? ... Excellent? Good? Fair? Poor? And, overall how satisfied were you with the way health care services were provided? Were you...Very satisfied? Somewhat satisfied? Neither satisfied nor dissatisfied? Somewhat dissatisfied? Very dissatisfied?

Patient Satisfaction

Very or Somewhat Satisfied with Provision of Health Care Services Received in Past 12 Months, Canada and Provinces by Sex, 2000



Source: Statistics Canada, Canadian Community Health Survey

Numerator: weighted number and percentage of individuals reporting very satisfied or somewhat satisfied with the service provided.

Denominator: total population aged 15 and older who used health cares services in past 12 months

Calculation: (Numerator/Denominator) x 100

Source: Statistics Canada, Canadian Community Health Survey (sub sample approximately 25,000) – Cycle 1.1 2000

Disclosures

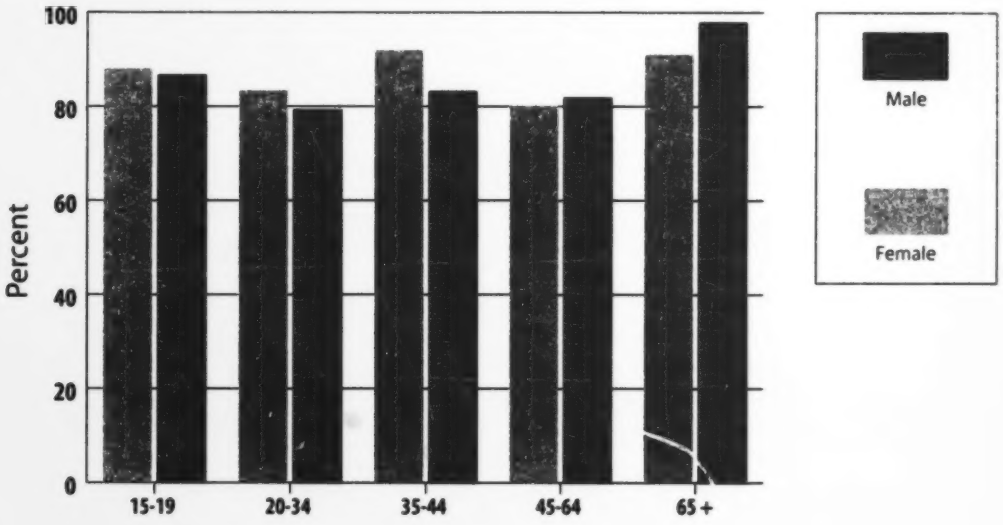
Exclusions: CCHS survey frame exclusions : The target population of the CCHS includes household residents in all provinces and territories; with the principal exclusion of populations on Indian Reserves, Canadian Forces Bases, and some remote areas. There will be one randomly selected respondent per household, although planned oversampling of youths will result in a second member of certain households being interviewed. For the first collection cycle only those 12 years of age and over are eligible for selection, although it is expected that in future cycles child-specific content will be included. Further info available at: http://www.statcan.ca/english/concepts/health/ccshinfo.htm#sam

Limitations: The following data points should be used with caution or were unavailable due to a large coefficient of variance:

- Graph: Patient Satisfaction, Very or Somewhat Satisfied with Provision of Most Recent Hospital Care in Past 12 Months, Canada & Provinces by Sex, Data Point(s): NU male and female

- Graph: Patient Satisfaction, Very or Somewhat Satisfied with Provision of Most Recent Hospital Care in Past 12 Months, Nova Scotia by Sex and Age Group, Data Point(s): 15-19 male and female
- Graph: Patient Satisfaction, Very or Somewhat Satisfied with Most Recent Family Doctor / Physician Care in Past 12 Months, Canada and Provinces by Sex , Data Point(s): NU male and female

Patient Satisfaction
Very or Somewhat Satisfied with Provision of Health Care Services Received in Past 12 Month, Nova Scotia by Sex and Age Group, 2000



Source: Statistics Canada, Canadian Community Health Survey.

- Graph: Patient Satisfaction, Very or Somewhat Satisfied with Most Recent Family Doctor / Physician Care in Past 12 Months, Nova Scotia by Sex and Age Group, Data Point(s): 15-19 male and female
- Graph: Patient Satisfaction, Very or Somewhat Satisfied with Most Recent Community Based Health Services in Past 12 Months, Canada and Provinces, Data Point(s): YT male and female
- Graph: Patient Satisfaction, Very or Somewhat Satisfied with Most Recent Community Based Health Services in Past 12 Months, Canada and Provinces by Sex, Data Point(s): NF, PE, NB and YT male and female

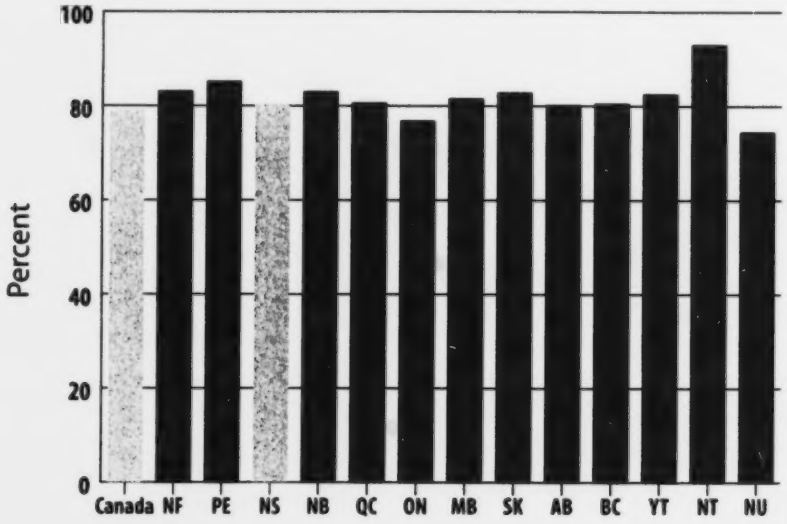
Departures from PIRC Requirements: Patient Satisfaction Surveys were responded to only by persons age 15 and older, thus reporting is not available for those ages 12 to 19.

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

Patient Satisfaction

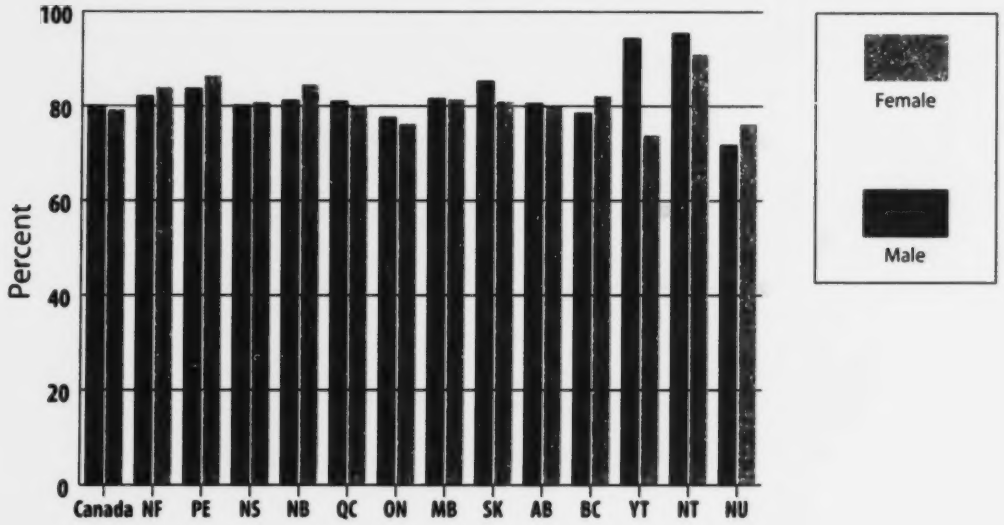
Very or Somewhat Satisfied with Provision of Most Recent Hospital Care in Past 12 Months Canada and Provinces, 2000



Source: Statistics Canada, Canadian Community Health Survey.

Patient Satisfaction

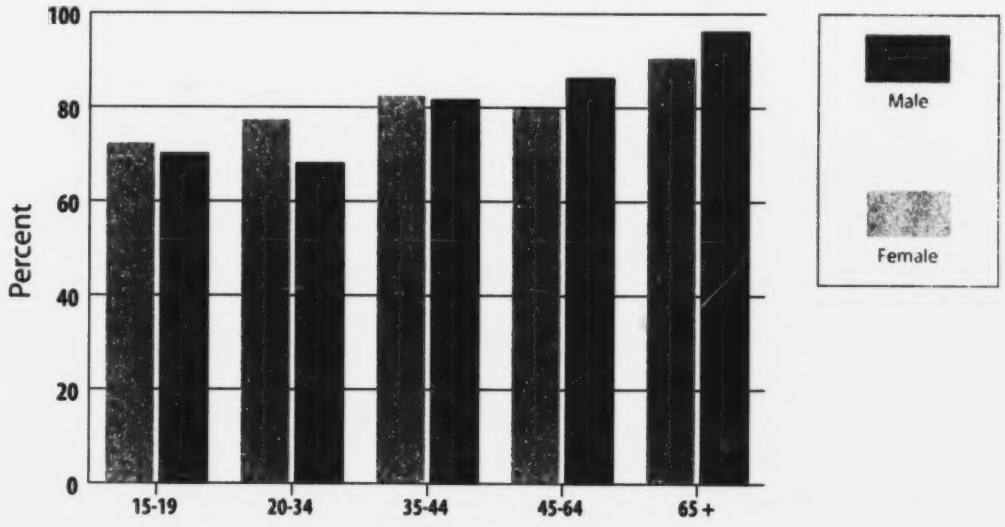
Very or Somewhat Satisfied with Provision of Most Recent Hospital Care in Past 12 Months Canada and Provinces by Sex, 2000



Source: Statistics Canada, Canadian Community Health Survey.
Due to a large coefficient of variance, NU data should be used with caution.

Patient Satisfaction

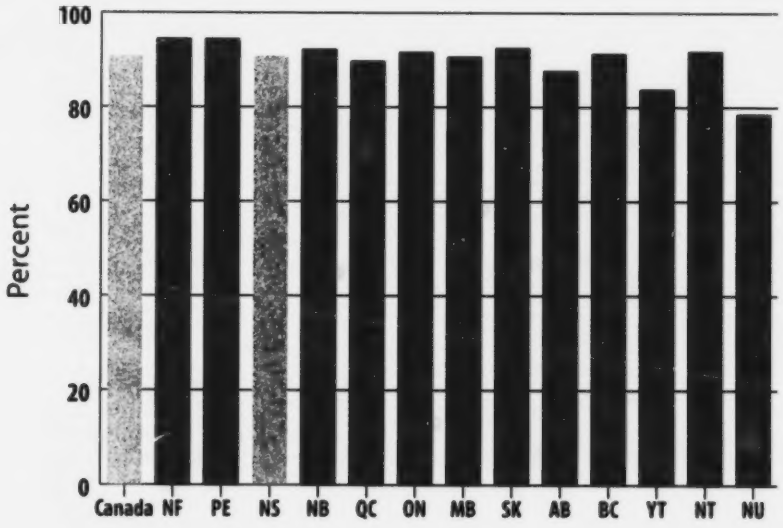
Very or Somewhat Satisfied with Provision of Most Recent Hospital Care in Past 12 Months, Nova Scotia by Sex and Age Group, 2000



Source: Statistics Canada, Canadian Community Health Survey.
Due to a large coefficient of variance, age 15-19 data should be used with caution.

Patient Satisfaction

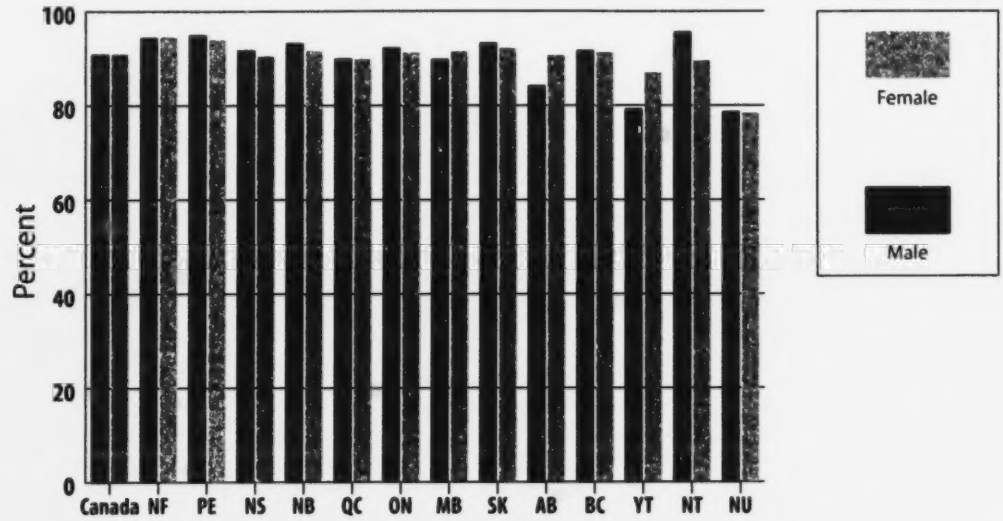
Very or Somewhat Satisfied with Most Recent Family Doctor / Physician Care in Past 12 Months, Canada and Provinces, 2000



Source: Statistics Canada, Canadian Community Health Survey.

Patient Satisfaction

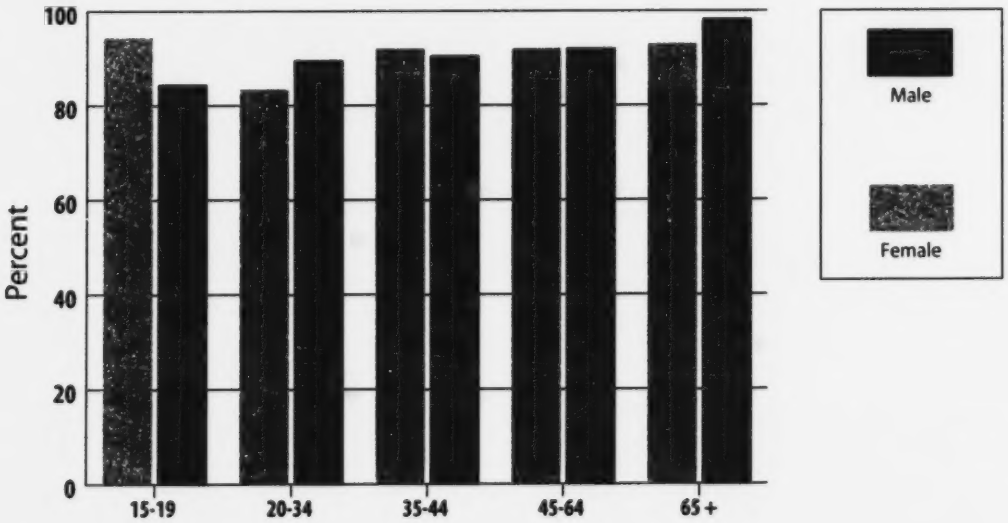
Very or Somewhat Satisfied with Most Recent Family Doctor / Physician Care in Past 12 Months, Canada and Provinces by Sex, 2000



Source: Statistics Canada, Canadian Community Health Survey.
Due to a large coefficient of variance, NU data should be used with caution.

Patient Satisfaction

Very or Somewhat Satisfied with Most Recent Family Doctor / Physician Care in Past 12 Months, Nova Scotia by Sex and Age Group, 2000

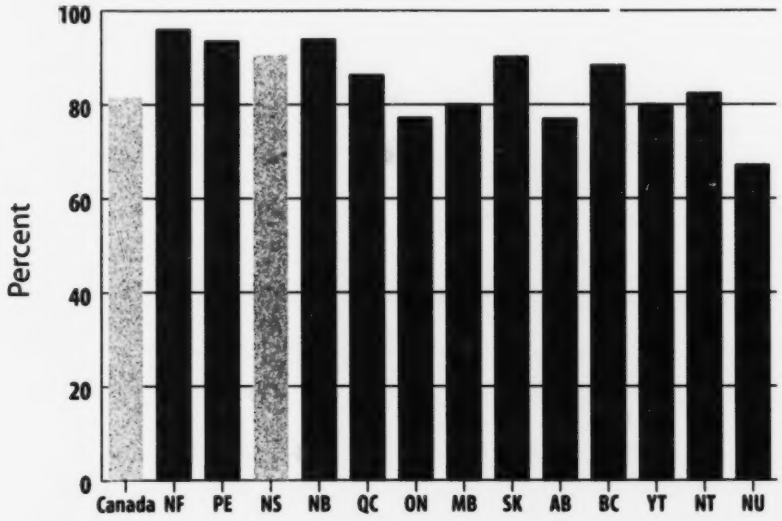


Source: Statistics Canada, Canadian Community Health Survey.
Due to a large coefficient of variance, age 15-19 data for males should be used with caution.

Patient Satisfaction

Very or Somewhat Satisfied with Most Recent Community Based Health Services in Past 12 Months, Canada and Provinces, 2000

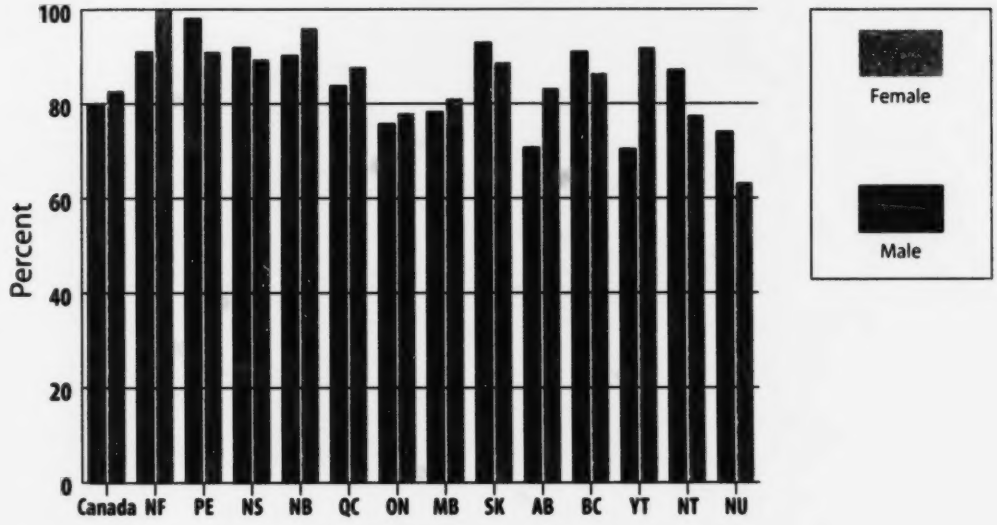
149



Source: Statistics Canada, Canadian Community Health Survey.
Due to a large coefficient of variance, YT data should be used with caution.

Patient Satisfaction

Very or Somewhat Satisfied with Most Recent Community Based Health Services in Past 12 Months, Canada and Provinces by Sex, 2000



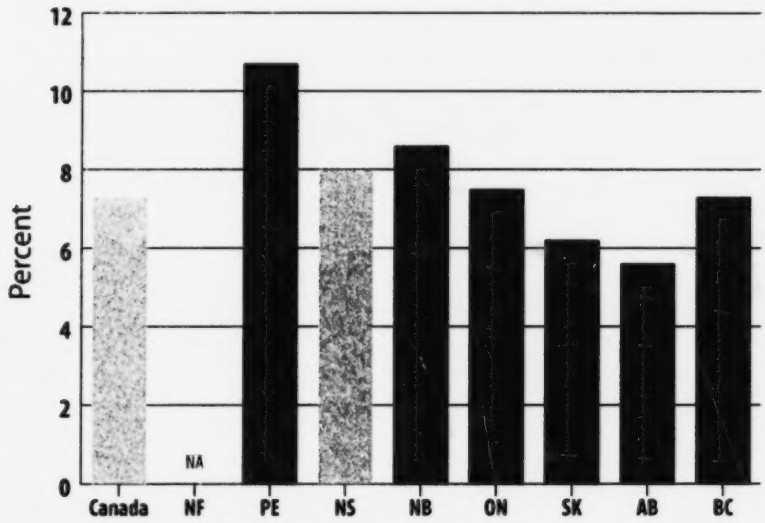
Source: Statistics Canada, Canadian Community Health Survey.
Due to a large coefficient of variance, NF, PE, NB and YT data should be used with caution.

150 Risk Adjusted Acute Myocardial Infarction Re-Admission Rate

Definition

Risk adjusted rate of unplanned re-admission following admission for acute myocardial infarction (AMI). A case is counted as a re-admission if it is for a relevant diagnosis or procedure and occurs within 28 days after the index AMI episode of care. An episode of care refers to all continuous acute care hospitalizations including transfers.

Risk-Adjusted Acute Myocardial Infarction Re-Admission Rate
Canada and Provinces, Pooled Average for 1997 – 1999



Source: Hospital Morbidity Database, CIHI.
Canadian average based only on provinces where data were available.

Significance – Rationale and Notes for Interpretation

Hospital re-admission rates for selected conditions can provide one measure of the quality of care. Many factors may be related to hospital re-admission for a related condition, for example: medication prescribed at initial discharge from hospital, patient compliance with directions, the quality of follow-up care in the community, and the quality and completeness of care during initial hospitalization. Some of these factors are directly related to care at the hospital while others relate to the availability of appropriate services in the community. Higher than normal readmission rates should lead health service managers to examine any of the following: practices in hospitals (e.g., early discharge criteria), the availability of appropriate community services, coordination between hospital and community providers, and patient education and instruction.

Numerator: Number of acute care in-patient AMI episodes with a re-admission during the year

Numerator Inclusion Criteria:

The numerator is a subset of the denominator meeting the following conditions:

1. Readmission within 28 days of discharge after the index episode of care
2. Emergent or urgent (non-elective) readmission to an acute care hospital
3. Readmission for any one of the following conditions (ICD-9):
   - Acute myocardial infarction (410)
   - Other acute and subacute forms of ischemic heart disease (411)
   - Old myocardial infarction (412)
   - Angina pectoris (413)
   - Other forms of chronic ischemic heart disease (414)
   - Conduction disorders (426)
   - Cardiac Dysrhythmias (427)
   - Functional disturbances following cardiac surgery (429.4)
   - Pneumococcal pneumonia (481)
   - Other bacterial pneumonia (482)
   - Bronchopneumonia, organism unspecified (485)
   - Pneumonia, organism unspecified (486)
   - Urinary tract infection (599.0)

Denominator: Total number of acute care AMI episodes during the year

Denominator (Index Episode) Inclusion Criteria:

1. Most responsible (Type M) diagnosis of Acute Myocardial Infarction (ICD-9 410 or ICD-9-CM 410) that is not also a Type 2 diagnosis (post-admit comorbidity) OR

   Where another diagnosis has been coded as the most responsible and also a Type 2, and a diagnosis of Acute Myocardial Infarction, although not the most responsible, is coded as a Type 1 (pre-admit comorbidity)
2. Discharge between April 1, and March 3 of the following year (period of case selection ends March 1 to allow for 28 days of follow-up)
3. Age at admission between 15 and 84 years
4. Gender recorded as male or female
5. Admission to an acute care institution
   - Length of stay of 3 or more consecutive days

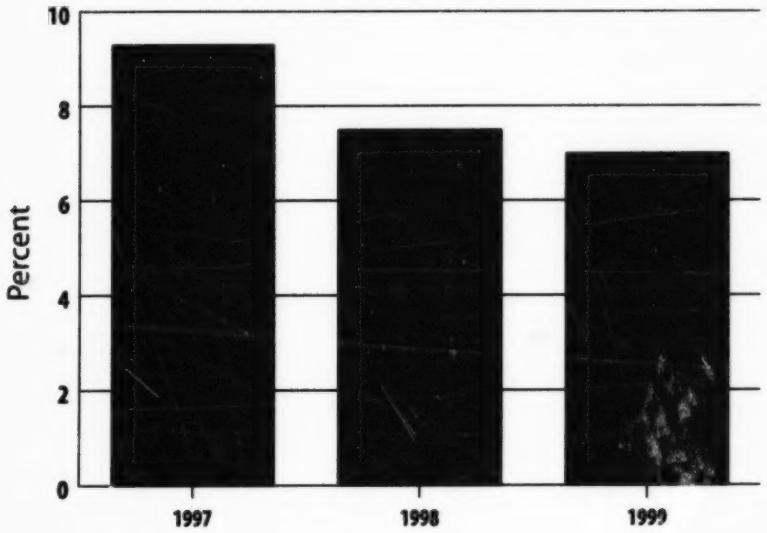
Denominator (Index Episode) Exclusion Criteria:

1. Records with an invalid Health Card Number
2. Discharged as a death or self sign-out
3. Any one of the following ICD-9 diagnoses recorded in any position:
   - Cancer (140-172, 174-208, V58.1, V58.0)
   - HIV (042, 043, 044, V08)
   - Trauma (E800-E848, E881-E884.1,E884.9, E886.0, E890-E899, E900-E910, E913-E926, E928, E950-E968, E970-E976, E990-E998)

Exclusion Criteria: Any one of the following procedures and not also a suffix of '8' (cancelled procedure) or '9' (previous procedure) in association with the readmission hospitalization (CCP):

- Coronary Artery Bypass Graft (48.1)
- Angioplasty (48.02, 48.03, 48.04, 48.09)
- Angiography/catheterization (48.92, 48.93, 48.94, 48.95, 48.96, 48.97, 48.98, 49.95, 49.96, 49.97)
- Pacemaker Insertion (49.7, 49.81, 49.82, 49.83, 49.84, 49.88)

Risk-Adjusted Acute Myocardial Infarction Re-Admission Rate
Nova Scotia, 1997 - 1999



Source: Hospital Morbidity Database, Canadian Institute for Health Information.

Calculation(s): A logistic regression model is fitted with age, gender, and select comorbid conditions as independent variables. Coefficients derived from the logistic model are used to calculate the probability of readmission for each case (i.e., index episode). The expected readmission rate of a province is the sum of these case probabilities divided by the total number of cases. The risk adjusted readmission rate (RARR) is calculated by dividing the observed readmission rate of each province by the expected readmission rate of the province and multiplying by the average readmission rate. A 95 percent confidence interval for the RARR is also calculated[21].

Source: Hospital Morbidity Discharge Abstract Database, Canadian Institute for Health Information

Disclosures

Exclusions: N/A

Limitations: Canada data point is based only on those provinces providing data.

Departures from PIRC Requirements: N/A

Plans for Future Reporting

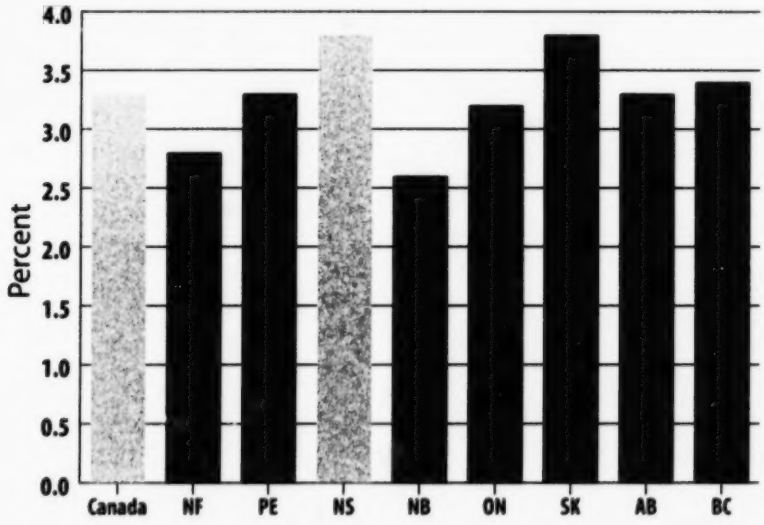
This indicator will continue to be reported in the standard manner as defined by the Canadian Institute for Health Information

154 Risk Adjusted Pneumonia Re-Admission Rate

Definition

Risk adjusted rate of unplanned re-admission following admission for Pneumonia. A case is counted as a re-admission if it is for a relevant diagnosis or procedure and occurs within 28 days after the index episode of care. An episode of care refers to all continuous acute care hospitalizations including transfers.

Risk-Adjusted Pneumonia Re-Admission Rate
Canada and Provinces, Pooled Average for 1997 - 1999



Source: Hospital Morbidity Database, CIHI.
Canadian average based only on provinces where data was available.

Significance – Rationale and Notes for Interpretation

Hospital re-admission rates for selected conditions can provide one measure of the quality of care. Many factors may be related to hospital re-admission for a related condition, for example: medication prescribed at initial discharge from hospital, patient compliance with directions, the quality of follow-up care in the community, and the quality and completeness of care during initial hospitalization. Some of these factors are directly related to care at the hospital while others relate to the availability of appropriate services in the community. Higher than normal readmission rates should lead health service managers to examine any of the following: practices in hospitals (e.g., early discharge criteria), the availability of appropriate community services, coordination between hospital and community providers, and patient education and instruction.

Numerator: Number of in-patient acute care pneumonia episodes with a re-admission during the year

The numerator is a subset of the denominator meeting the following conditions:

1. Readmission within 28 days of discharge after the index episode of care
2. Emergent or urgent (non-elective) readmission to an acute care hospital
3. Readmission for any one of the following conditions (ICD-9):
   - Pneumococcal pneumonia (481)
   - Other bacterial pneumonia (482)
   - Bronchopneumonia, organism unspecified (485)
   - Pneumonia, organism unspecified (486)
   - Other specified bacteria (0084)
   - Staphylococcal septicemia (0381)
   - Empyema (510)
   - Unspecified pleural effusion (511.9)
   - Urinary tract infection, site not specified (599.0)

Denominator: Total number of acute care pneumonia episodes during the year

Inclusion Criteria:

1. Most responsible (Type M) diagnosis of Pneumonia (ICD-9 481, 482, 485, 486) that is not also a Type 2 diagnosis (post-admit comorbidity) OR

   Where another diagnosis has been coded as the most responsible and also a Type 2, and a diagnosis of Pneumonia, although not the most responsible, is coded as a Type 1 (pre-admit comorbidity)
2. Discharge between April 1, and March 3 of the following year (period of case selection ends March 1 to allow for 28 days of follow-up)
3. Age at admission between 15 and 84 years
4. Gender recorded as male or female
5. Admission to an acute care institution

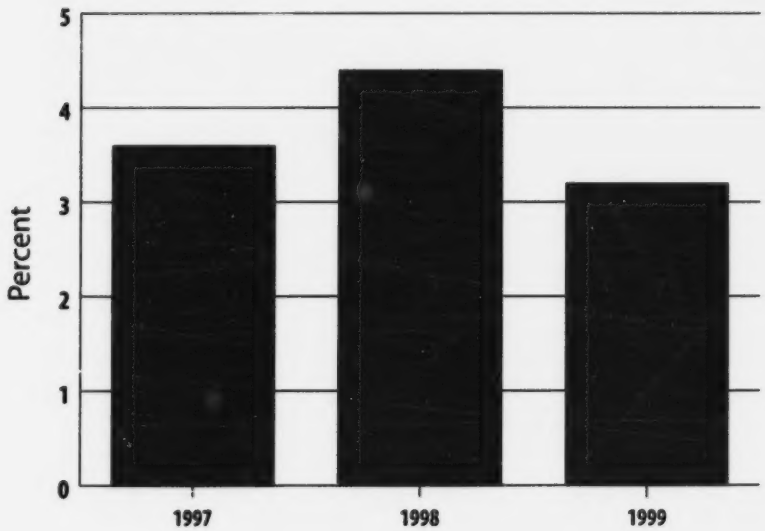
Exclusion Criteria:

6. Records with an invalid Health Card Number
7. Discharged as a death or self sign-out
8. Any one of the following ICD-9 diagnoses recorded in any position:
   - Cancer (140-172, 174-208, V58.1, V58.0)
   - HIV (042, 043, 044, V08)

Calculation(s): A logistic regression model is fitted with age, gender, and select comorbid conditions as independent variables. Coefficients derived from the logistic model are used to calculate the probability of readmission for each case (i.e., index episode). The expected readmission rate of a province is the sum of these case probabilities divided by the total number of cases. The risk adjusted readmission rate (RARR) is calculated by dividing the observed readmission rate of each province by the expected readmission rate of the province and multiplying by the average readmission rate. A 95 percent confidence interval for the RARR is also calculated.[21]

Source: Hospital Morbidity Database, Canadian Institute for Health Information

Risk Adjusted Pneumonia Re-Admission Rate
Nova Scotia, 1997 - 1999



Source: Hospital Morbidity Database, Canadian Institute for Health Information.

Disclosures

Exclusions: N/A

Limitations: Canada data point is based only on those provinces providing data.

Departures from PIRC Requirements: N/A

Plans for Future Reporting

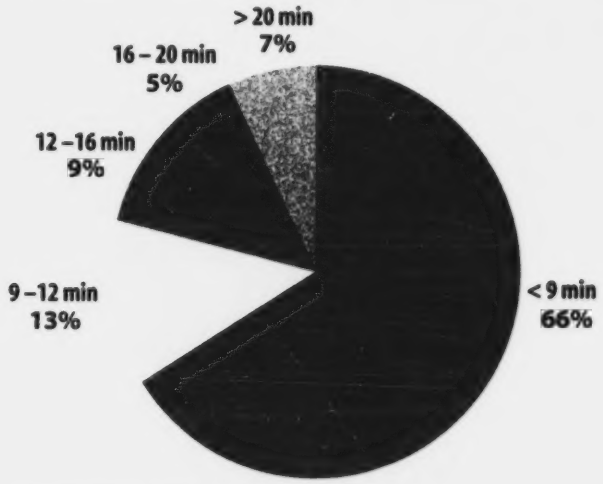
This indicator will continue to be reported in the standard manner as defined by the Canadian Institute for Health Information.

Ground Ambulance Response Times for Emergency Calls

Definition

The time elapsed between the moment the call is received at the Emergency Medical Dispatch Centre and the actual arrival of an ambulance at that location.

Ground Ambulance Response Times for Emergency Calls
Nova Scotia, 2000/2001



Source: Emergency Medical Services.

Significance – Rationale and Notes for Interpretation

As the development of a community based Primary Health Care system is a strategic direction for the Nova Scotia Department of Health, performance indicators for primary health care will be important for three purposes:

1. To assist with continuous quality improvement activities at the local level;
2. To support performance reporting at the regional and provincial level;
3. To tract the efforts of renewal in primary health care among provinces at a national level.

Primary Health Care is now understood to include both traditional first contact 24/7 and ongoing care and population based interventions which enable people to maintain and improve their health. Services include health education, promotion, prevention, rehabilitation, support and treatment for illness and injury. Primary health care brings health care as close as possible to where people live, work, and constitutes the first element of a continuing health improvement process.

Primary Health Care addresses the many factors that affect health within a coordinated community based system that ensures linkages within the health care delivery system, and with community and other programs that improve the health of the population. Primary health care is developed with the full participation of the people it serves.

As one measure for access to 24/7 first contact health services, Nova Scotian has chosen to report on Ground Ambulance Response times. A fast and appropriate response increases the chances of survival in an emergency. EHS has defined the minimum standard for response time reliability so as to offer the best emergency service to Nova Scotians.

Technical Specifications

Numerator: Proportion of responses within each time frame grouping:

1. Less than 9 minutes
2. Between 9 and 12 minutes
3. Between 12 and 16 minutes
4. Between 16 and 20 minutes
5. More than 20 minutes

Denominator: Total Emergency Responses: 38, 521

Source: Emergency Medical Services Nova Scotia

Disclosures

Exclusions: N/A

Limitations: N/A

Departures from PIRC Requirements: This is not a PIRC-defined indicator. It was included in the report in lieu of the proposed Access to 24/7 First Contact Health Services indicators. The Office of the Auditor General of Nova Scotia has not reviewed the data source.

Plans for Future Reporting

Four Strengthening Primary Care Initiative projects are completing their initial three-year cycle. Nova Scotia has increased its ability to evaluate primary health care through the projects' evaluation. As part of these initiatives there has been a focus on the electronic health record and the utilization of information gathered in this record to evaluate the project. Chart audits for clinical care utilized this data. The projects have also used a validated adaptation of two internationally recognized Primary Care Assessment tools to obtain patient-client's perspectives on communication, trust, quality of care and accessibility. Qualitative evaluation was carried out through on site structured provider interviews and patient/client focus groups.

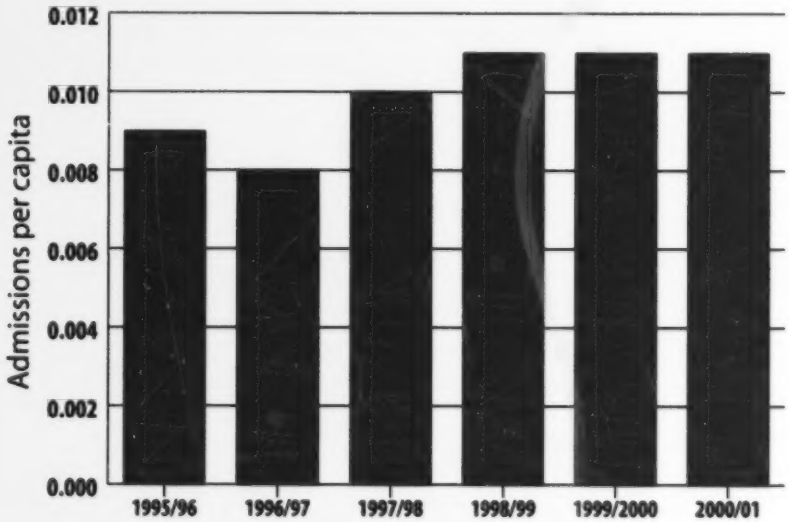
Work is proceeding at the national level to create a comprehensive framework of primary health indicators. Nova Scotia will engage opportunities to partner with national initiatives to develop this framework and reliable instruments.

Home Care Admissions

Definition

The number of admissions to publicly funded home care services, including home health and home support services, per capita

Home Care Nova Scotia Chronic and Acute Admissions
Nova Scotia, 1995/96 - 2000/01



Source: Source: Home Care Nova Scotia, Nova Scotia Department of Health.

Significance – Rationale and Notes for Interpretation

In recent years, governments have supported programs to deliver some health services to people in their homes, as an alternative to admitting people to acute care or long term care facilities. This trend has certain benefits, for example: people needing care are more comfortable, and their life styles and independence are maintained for as long as possible; facility space can be reserved for those with greater health care needs; lower costs are often associated with home care, compared to care in institutions.

As more home care programs are implemented, it is expected that these services will be provided to increasing numbers of people. The indicators proposed here can show progress in the implementation of these programs, as long as there are remaining health needs which can be met through home care programs. At some point, however, home care programs may meet all the needs that can be addressed through such services; volume measures by themselves cannot show when all the health service needs are being met nor can they show how well these needs are being met.

Trends in home care volumes may be compared with trends in utilization of facility-based services (such as acute care admissions) to illustrate that increased availability of high quality home care can reduce hospital utilization. High quality home care services would be expected to reduce the need for acute care admissions or emergency care for people with certain chronic health conditions [see Indicator 12d, ambulatory care sensitive conditions], and to delay or prevent the need for long-term facility care. For example, as home care use among the elderly increases, there should be a corresponding decrease in waiting for long-term care space and an increase in the acuity of long-term care residents. Reporting data on these expected impacts of home care programs along with these volume indicators provides an indirect way of gauging the quality of these programs.

Technical Specifications

Home care services: A range of health-related, social and support services received at home with costs being entirely or partially covered by a national/provincial/territorial health plan. These services enable clients incapacitated, in whole or in part, to live in their home environment. These services help individuals achieve and maintain optimal health, well being and functional ability through a process of assessment, case co-ordination, and/or the provision of services. Service recipients may have one or more chronic health conditions or recently experienced an acute episode of illness or hospitalization. The range of services provided includes maintenance, rehabilitation, long-term supportive care, acute care substitution, end-of-life care and support for informal caregivers.

Home health care: Includes information and referral, assessment and case management services, nursing services and therapy services.

Home support: Includes homemaking services, personal care or assistance with daily living, meal provision, and home maintenance, home adaptation, transportation, respite and volunteer services.

Admissions to home care services: Individuals are counted when they are accepted into the home care program within the fiscal year of interest. Acceptance is defined as: a) acknowledgement by the home care program that the individual qualifies for service (based on assessed needs and program criteria); and b) agreement between the program and the individual (or caregiver) to begin service delivery.

Numerator: Total number of admissions to home care services (health, social and support services) during the fiscal year

Denominator: Total provincial/territorial population from census or census estimates

Calculations: Total admissions to home care services ÷ total provincial/territorial population

Source: Home Care Nova Scotia, Nova Scotia Department of Health

Disclosures

Exclusions: None (administrative data do not allow for exclusion of out-of-province clients)

Limitations: Unable to verify source data. Data may include multiple admissions for the same client (an individually may be counted more than once in a given fiscal period only if he/she was discharged from the home care program and accepted for another period of service within that year).

Departures from PIRC Requirements: Data were not available for reporting by age groups. Gender and age identification was not captured by Home Care Nova Scotia prior to 2001/2002.

Plans for Future Reporting

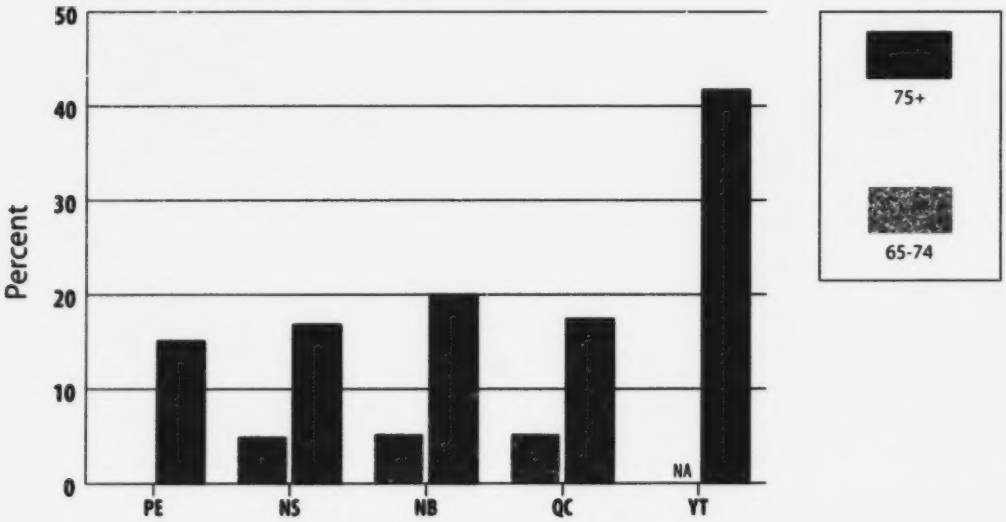
This indicator will continue to be reported in the standard manner as defined by the PIRC committee and the Nova Scotia Department of Health.

162 Percent Receiving Homemaking, Nursing, or Respite Services

Definition

The proportion of the population reporting receipt of specified home care services. The definition was developed with the National Population Health Survey (NPHS) Advisory Committee. It represents a generic description of the types of services provided across the provinces. Unlike administrative data, the estimates are based on the population receiving the services as opposed to services delivered.

Percent Receiving Homemaking, Nursing, or Respite Services, Ages 65 - 74 and 75+, Provinces, 2000



Source: Statistics Canada, Canadian Community Health Survey.
Due to a large coefficient of variance, YT data should be used with caution.

Significance – Rationale and Notes for Interpretation

These indicators apply to individuals who have received home care services over a 12-month reference period. The indicators apply to individuals 18 years old and older living in private households.

Technical Specifications

Numerator: weighted number and percentage of individuals reporting selected types of services.

Denominator: total Canadian population aged 18 and older.

Calculation: (Numerator/Denominator) x 100

The CCHS includes the following Definition for home care services: Home care services are health care or homemaker services received at home, with the cost being entirely or partially covered by government.

The following survey questions are included:

- Have you received any home care in the past 12 months? Yes/No
- What types of services have you received? (Cost must be entirely or partially covered by government)

Nursing care (e.g., dressing changes, VON)

Other health care services (e.g., physiotherapy, nutrition counseling)

Personal care (e.g., bathing, foot care)

Housework (e.g., cleaning, laundry)

Meal preparation or delivery

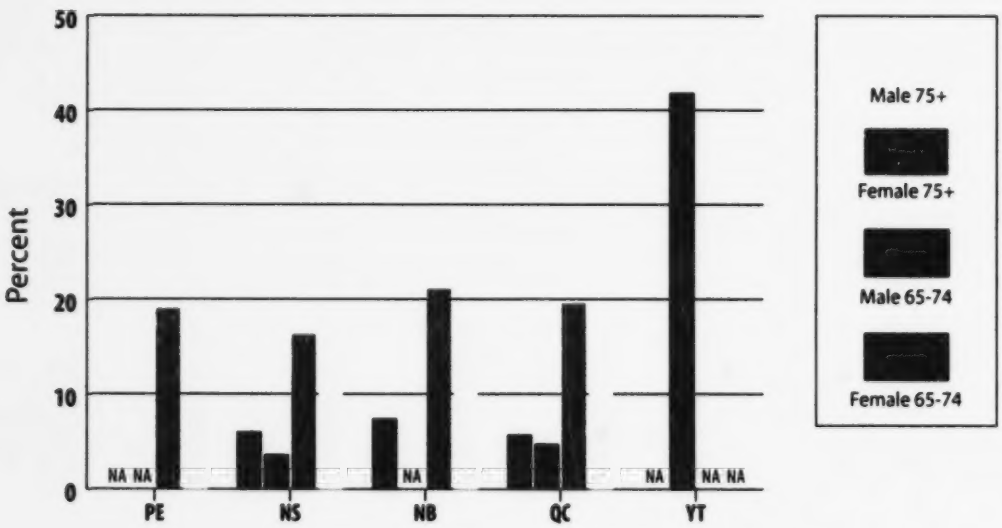
Shopping

Respite care (i.e., caregiver relief program)

Other – Specify

Source: Statistics Canada, Canadian Community Health Survey – Cycle 1.1 2000

Percent Receiving Homemaking, Nursing, or Respite Services, Ages 65 - 74 and 75+, Provinces by Sex, 2000



Source: Statistics Canada, Canadian Community Health Survey.
Due to a large coefficient of variance, PE data ages 65-74 and NB data male 65-74 was not available.
PE, NS and NB data should be used with caution.

Disclosures

Exclusions: CCHS survey frame exclusions; jurisdictions in which some or all regions chose not to have these optional questions included on CCHS. CCHS survey frame exclusions: The target population of the CCHS includes household residents in all provinces and territories; with the principal exclusion of populations on Indian Reserves, Canadian Forces Bases, and some remote areas. There will be one randomly selected respondent per household, although planned oversampling of youths will result in a second member of certain households being interviewed. For the first collection cycle only those 12 years of age and over are eligible for selection, although it is expected that in future cycles child-specific content will be included. http://www.statcan.ca/english/concepts/health/ccshinfo.htm#sam

Limitations: The following data points should be used with caution or were unavailable due to a large coefficient of variance:

- Graph: Percent Receiving Homemaking, Nursing, or Respite Services, Ages 65-74 and 75, Provinces. Data Point(s): YT ages 65-74 and 75+, and PE ages 65-74.
- Graph: Percent Receiving Homemaking, Nursing, or Respite Services, Ages 65-74 and 75, Provinces by Sex, Data Point(s): PE, NB, NS male and female, 65-74, 75+.

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

Age Standardized Rate of Hospitalization for Ambulatory Care Sensitive Conditions

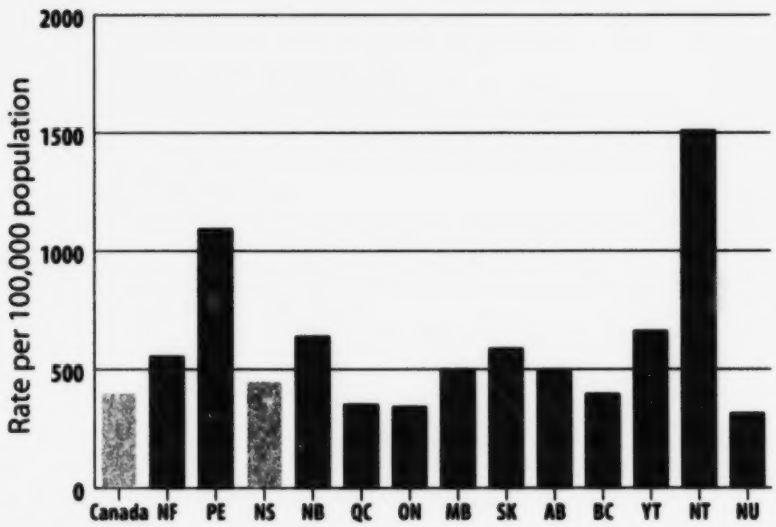
Definition

Age standardized in-patient acute care hospitalization rate for conditions where appropriate ambulatory care may prevent or reduce the need for admission to hospital.

Age standardization is a way of looking at the proportion of illness in a specific place and asking, "what would we expect the proportion of illness to be if this place had the same age structure as the rest of Canada?" The rates shown therefore do not cite the actual number of observed cases, but the numbers of expected cases in the standard population.

By using this method we can do valid comparisons across different parts of the country to see if health problems are actually more serious in one place than in another. Age standardized statistics must be standardized to the same population census data. Data is not comparable if, for instance, some data is standardized to 1996 population data and some is standardized to 1991 population data.

Age Standardized Rate of Hospitalization for Ambulatory Care Sensitive Conditions, Canada and Provinces, 1999/2000



Source: Hospital Morbidity Database, CIHI, Census, Statistics Canada; ISQ.

166 Significance – Rationale and Notes for Interpretation

Hospitalization rates for conditions which may often be cared for in the community are one indicator of appropriate access to community-based care. These are long-term health conditions which can often be managed with timely and effective treatment in the community, without hospitalization. These conditions include diabetes, asthma, alcohol and drug dependence and abuse, neuroses, depression, hypertensive disease, and others. Although preventive care, primary care, and community based management of these conditions will not eliminate all hospitalizations, such steps could eliminate many of them.

Health care professionals generally believe that managing these conditions before a patient requires hospitalization improves the patient's health, contributes to better overall community health status, and often saves money because community-based care usually costs less than hospitalization. Optimizing the management and treatment of these conditions will contribute to both improved patient health outcomes and more efficient resource utilization.

The hospitalization rates for these conditions tend to vary from place to place; for example, there are large rural/urban differences. One factor influencing the variation in rates is likely to be the extent to which preventive care and management within the community are available and accessible. Tracking hospitalization rates for these conditions over time can provide an indicator of the impact of community and home based services. Variations over time, and differences between regions, should be examined to determine the extent to which they are attributable to the accessibility and quality of community-based care, hospital admitting practices or the prevalence and acuity of these chronic health conditions.

Technical Specifications

Numerator: number of ACSC in-patient separations from acute care hospitals (discharges and deaths) during the year, by age and gender categories

Denominator: population by age and gender categories, either from census or census estimates, for the year

Calculation: standardized rates are age-adjusted using a direct method of standardization based on the July 1, 1991 Canadian population

Source: Hospital Morbidity Database, Canadian Institute for Health Information. Census, Statistics Canada; ISQ

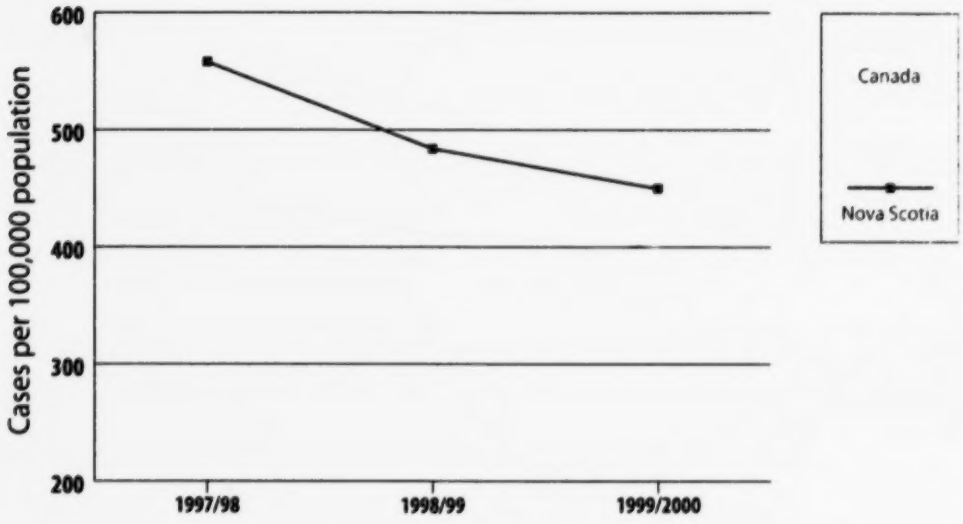
Disclosures

Exclusions: Patients not treated as inpatients in acute care hospitals (e.g. those seen only in an emergency department or chronic care institution).

Limitations: N/A

Departures from PIRC Requirements: None

Age Standardized Rate of Hospitalization for Ambulatory Care Sensitive Conditions, Nova Scotia vs Canada, 1997/1998 - 2000/2001

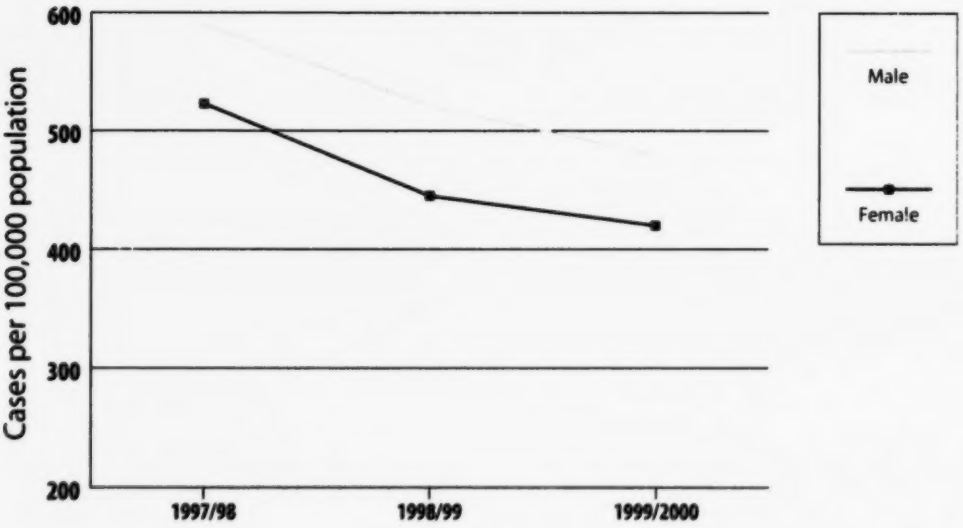


Source: Hospital Morbidity Database, CIHI, Census, Statistics Canada, ISQ.

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by Statistics Canada and the Canadian Institute of Health Information.

Age Standardized Rate of Hospitalization for Ambulatory Care Sensitive Conditions, Nova Scotia by Sex, 1997/1998 - 2000/2001



Source: Hospital Morbidity Database, CIHI, Census, Statistics Canada.

168 Tuberculosis Incidence Rate

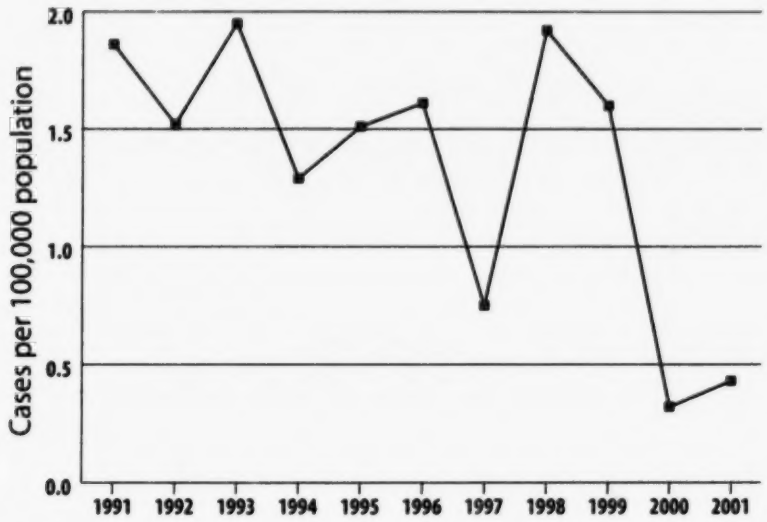
Definition

Rate of incident cases of infectious pulmonary tuberculosis reported by calendar year.

Cases with mycobacterium complex (i.e. M. tuberculosis, M. bovis, excluding BCG strain or M. africanum) demonstrated on culture in the absence of bacteriological proof, cases clinically compatible with active tuberculosis that have, for example:

- Chest x-ray changes compatible with active tuberculosis including idiopathic pleurisy with infusion
- Active extrapulmonary tuberculosis (meningeal, bone, kidney, peripheral lymph nodes, etc.)
- Pathologic or post-mortem evidence of active tuberculosis.

Tuberculosis Incidence Rate
Nova Scotia, 1991 - 2001



Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Significance – Rationale and Notes for Interpretation

TB is an important public health problem that has become more prominent in recent years. Incidence is linked to high-risk groups such as recent immigrants, First Nations communities and people co-infected with HIV. Multiple drug resistance is also emerging as a problem.

Technical Specifications

Numerator: Number of reported cases of new active and relapsed tuberculosis

Denominator: Total population

Calculation: Numerator/denominator x 100,000

Source: Canadian Tuberculosis Reporting System (CTBRS), Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health, Communicable Disease Reports

Disclosures

Exclusions: None

Limitations: N/A

Departures from PIRC Requirements: None

Plans for Future Reporting

This indicator will continue to be reported in the standard manner as defined by the Nova Scotia Department of Health.

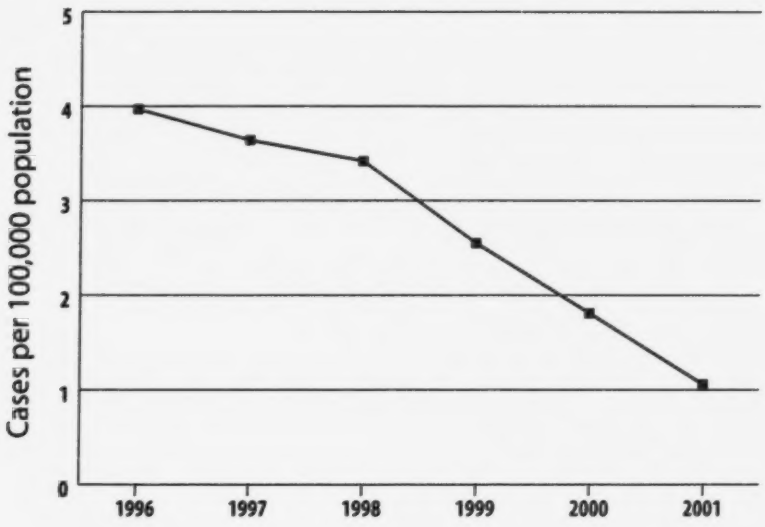
170 Reported HIV Diagnoses

Definition

Estimates of new diagnoses of HIV infection, based on new positive HIV test reports

This report provides information ONLY on those tested for HIV and does not represent the total number of persons infected with HIV. That is, the number of HIV test reports in a given year is composed partly of individuals infected in that year, but also of individuals infected in previous years. Furthermore, some individuals infected in a given year will be diagnosed (tested positive for HIV) in that year, but the majority will not be diagnosed until a subsequent year. Therefore, the relationship between HIV incidence and positive HIV test reports is determined by HIV testing behavior, which is influenced by many factors.

Reported HIV Diagnoses
Nova Scotia and Prince Edward Island, 1996 - 2001



Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Significance – Rationale and Notes for Interpretation

The rate of decline of new HIV infections has slowed or perhaps reversed. Most infections are sexually transmitted. This can be considered an indicator of high-risk sexual behaviours.

The number of new HIV diagnoses is a function of both HIV incidence and HIV testing patterns.

The number of HIV test reports in a given year includes individuals infected in that year as well as individuals infected in previous years; most individuals will not be diagnosed in the year they are infected. In addition to changes in HIV incidence and testing patterns, the number of new diagnoses is also influenced by reporting delays and improved removal of duplicate reports. Thus, changes in the numbers/rates of reported positive tests must be interpreted with caution.

Nevertheless, these numbers are useful in tracking the HIV epidemic.

Technical Specifications

Numerator: Number of newly diagnosed cases of HIV infection

Denominator: Total population

Calculation: Numerator/denominator x 100,000

Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health

Disclosures

Exclusions: None

Limitations: Nova Scotia data were too small to warrant the release of just NS numbers. hence the inclusion of PEI data as well. There are currently varying practices in terms of reporting HIV, which may make comparisons between jurisdictions difficult.

Departures from PIRC Requirements: Data is available from 1995 on only.

Annual Trends

Changes to the number of reported HIV positive tests as well as observed trends must be interpreted with caution. There are a number of factors that may contribute to changes in reported HIV positive tests. In addition to changes in the number of new infections per year, other factors include changes in testing patterns (i.e. who comes forward for testing and when), improved duplicate removal, and reporting delay. The distribution of proportions of positive HIV tests among exposure categories should also be interpreted with caution due to the high number of reports in which gender or exposure category is not identified.

Duplicate HIV Case Reports

Duplicate positive HIV test reports (repeat tests for the same individual who is HIV positive) result in an overestimate of the number of positive HIV test reports. The removal of duplicate positive tests is difficult due to the non-nominal (or non-identifying) nature of HIV reporting in some jurisdictions. Where possible, provinces and territories periodically review and assess the presence of duplicate reports in their positive HIV test data in order to provide as accurate a picture as possible of the number of new individuals who test positive for HIV. Duplicate test removal varied for the period 1985-1994, therefore annual trends in this period are not displayed in this report as comparisons between years may not be valid.

Plans for Future Reporting

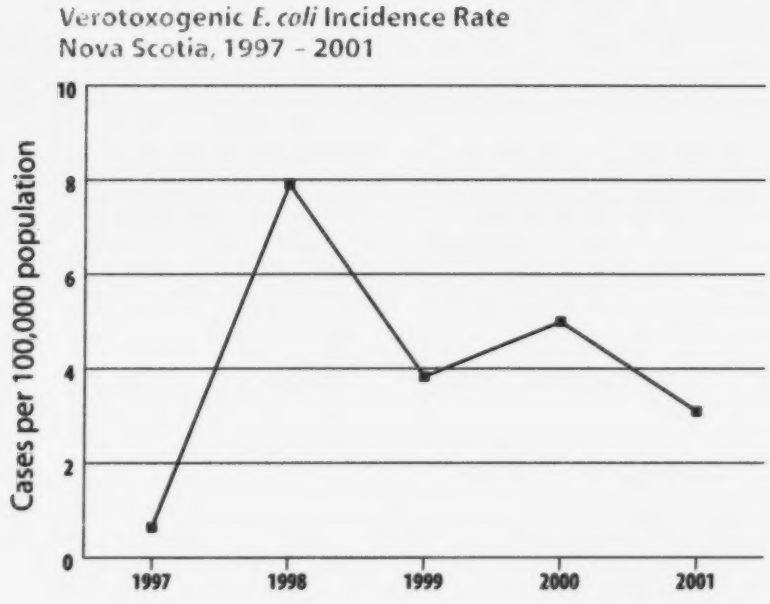
This indicator will continue to be reported in the standard manner as defined by the Nova Scotia Department of Health.

172 Verotoxogenic *E Coli* Incidence Rate

Definition

The rate of incident cases reported by year

A confirmed case is defined as laboratory confirmation of infection with or without symptoms with isolation of verotoxin producing Escherichia coli from an appropriate clinical specimen.



Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Significance – Rationale and Notes for Interpretation

This may be considered an approximate indicator of food-borne illness. It also has implications for water-borne disease issues. *E. coli* 0157 is included in the category of verotoxogenic E. coli (VTEC), accounting for more than 90% of cases. There is an intent that all jurisdictions should report VTEC in the future.

Technical Specifications

Numerator: Number of reported cases of Verotoxogenic *E. coli*

Denominator: Total population

Calculation: Numerator/denominator x 100,000

Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Disclosures

Exclusions: None

Limitations: N/A

Departures from PIRC Requirements: None

Plans for Future Reporting

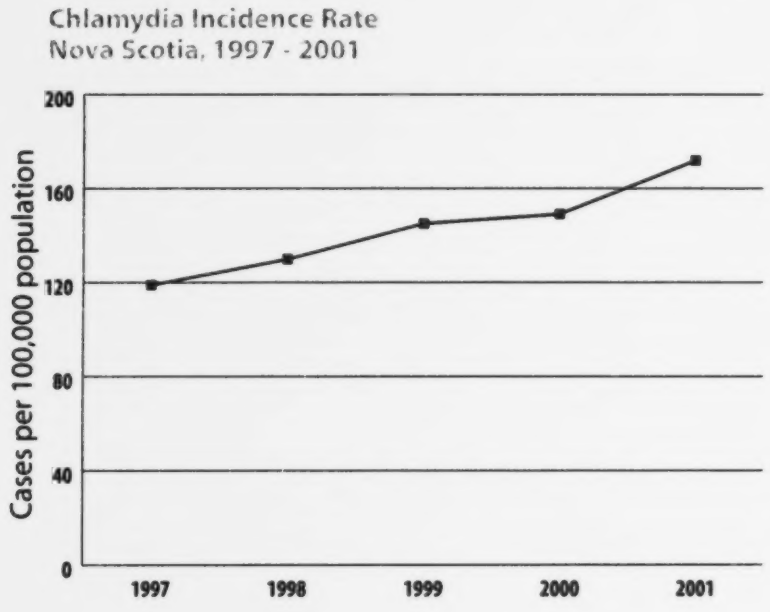
This indicator will continue to be reported in the standard manner as defined by Nova Scotia Department of Health.

174 Chlamydia Incidence Rate

Definition

Incidence rate of reported genital infections, by calendar year

A confirmed case is defined as laboratory confirmation of infection - detection of C. trachomatis by appropriate laboratory techniques in genitourinary specimens.



Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Significance – Rationale and Notes for Interpretation

This is a common sexually transmitted disease which may result in female infertility and ectopic pregnancy. The higher incidence rates relative to other STDs are a more sensitive indicator of change in risk behaviours and reflect the effectiveness of primary and secondary prevention.

The introduction of non-invasive and more sensitive tests for chlamydia can increase the reported rate in a jurisdiction; timing of the implementation of such tests should be noted. The new diagnostic test introduced around 1997 (nucleic acid amplification test or NAAT) initially accounted for some of the increase in incidence. However, since the incidence of Chlamydia and other sexually transmitted diseases has continued to increase, it can be assumed there actually are more cases now, and we are no longer seeing the effect of the new test.

Technical Specifications

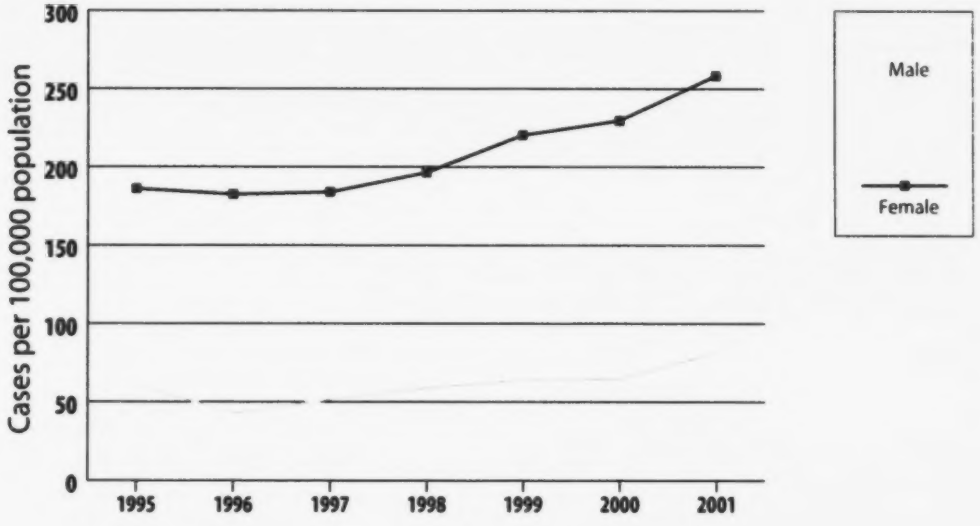
Numerator: Reported cases of genital Chlamydia infection

Denominator: Total population by age group

Calculation: Numerator/denominator x 100,000

Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Chlamydia Incidence Rate
Nova Scotia by Sex, 1995 - 2001



Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Disclosures

Exclusions: None

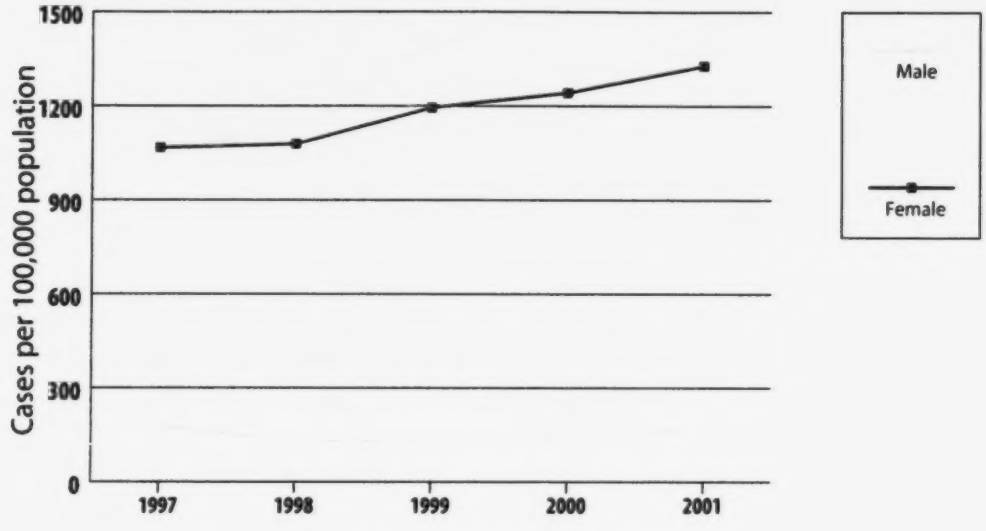
Limitations: N/A

Departures from PIRC Requirements: N/A

Plans for Future Reporting

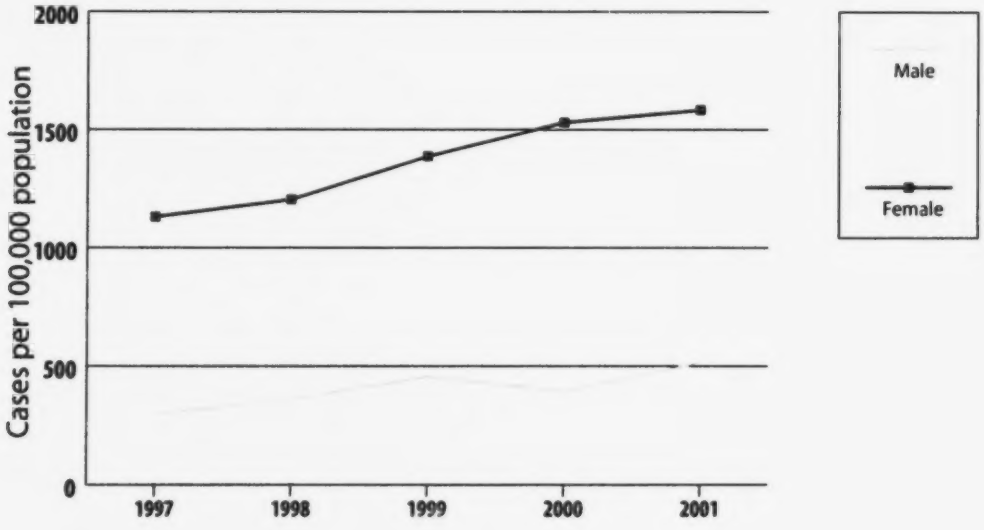
This indicator will continue to be reported in the standard manner as defined by Nova Scotia Department of Health.

Chlamydia Incidence Rate, Age 15 - 19
Nova Scotia by Sex, 1997 - 2001



Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Chlamydia Incidence Rate, Age 20 - 24
Nova Scotia by Sex, 1997 - 2001



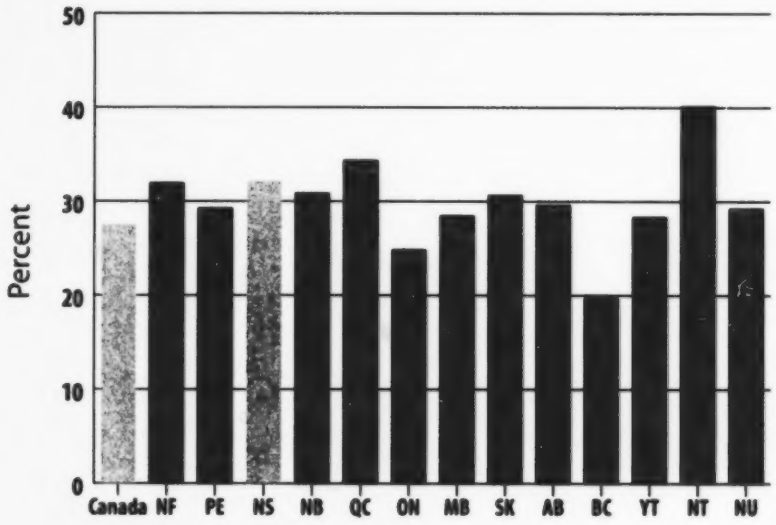
Source: Office of the Provincial Medical Officer of Health, Nova Scotia Department of Health.

Exposure to Environmental Tobacco Smoke

Definition

Proportion of the non-smoking population regularly exposed (as indicated by exposure in the last month) to environmental tobacco smoke in Canada.

Exposure to Environmental Tobacco Smoke in the Last Month, Age 12+, Canada and Provinces, 2000



Source: Statistics Canada, Canadian Community Health Survey.

Significance – Rationale and Notes for Interpretation

This indicator reflects the effectiveness of the public health system in protecting non-smokers against exposure to tobacco smoke in public spaces and work places.

The relationship between environmental tobacco smoke and adverse health effects is well accepted. Besides being a known mucous membrane irritant, second-hand smoke exposure is linked to increases in mortality from lung cancer and cardiovascular disease. Second-hand smoke has serious consequences for children: smoking mothers bear children with lower birth weights, and children living in homes where they are exposed to tobacco smoke have higher rates of asthma and respiratory tract problems. There is strong evidence of an association between exposure to environmental tobacco smoke and respiratory illness.

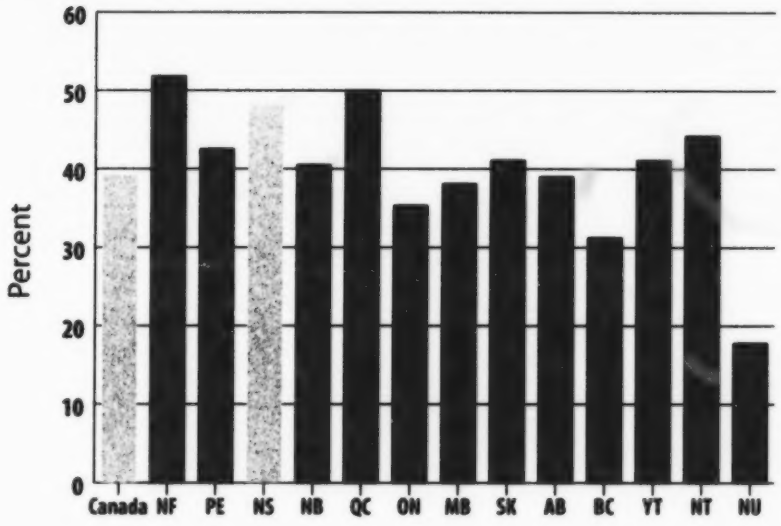
Numerator: Total number of non-smoking persons reporting exposure to environmental tobacco smoke in the last month in Canada.

Denominator: Total non-smoking population

Calculation: Numerator/Denominator X 100

Source: Statistics Canada, Canadian Community Health Survey

Exposure to Environmental Tobacco Smoke in the Last Month, Age 12 - 19, Canada and Provinces, 2000



Source: Statistics Canada, Canadian Community Health Survey.
Due to a large coefficient of variance, NT and NU data should be used with caution.

Disclosures

Exclusions: None

Limitations: The following data points should be used with caution or were unavailable due to a large coefficient of variance:

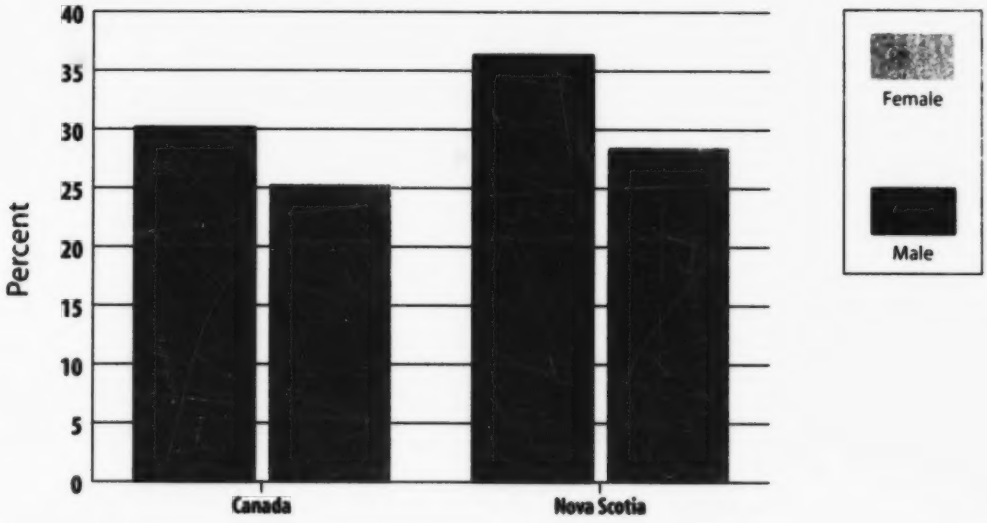
- Graph: Exposure to Environmental Tobacco Smoke in the Last Month, Canada and Provinces, Age 12-19, Data Point(s): NT and NU
- Graph: Exposure to Environmental Tobacco Smoke in the Last Month, Nova Scotia by Sex and Age, Data Point(s): Age 75+, male and female

Departures from PIRC Requirements: Data for the 20+ age groups was unavailable, thus total population data (age 12+) was used in place thereof.

Plans for Future Reporting

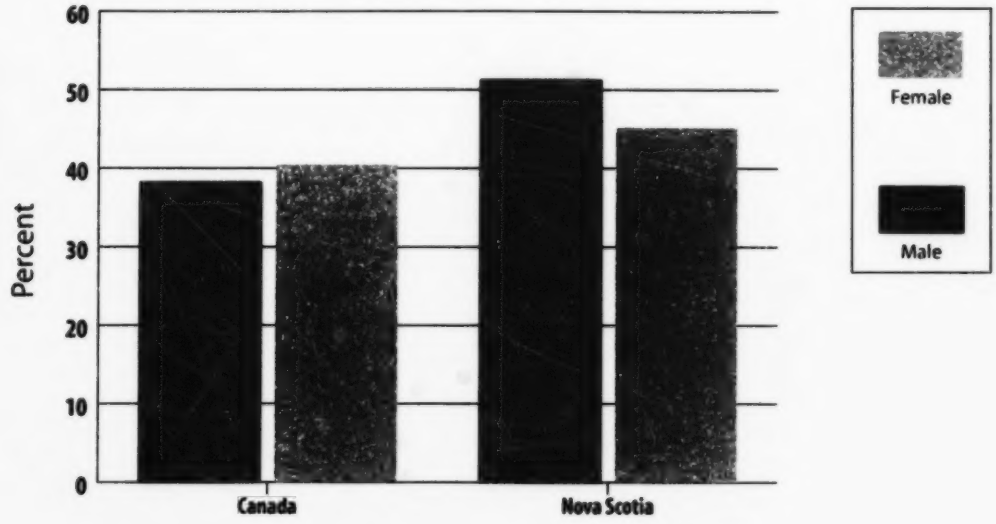
Nova Scotia is implementing a province-wide Comprehensive Tobacco Strategy. The strategy addresses seven key components: taxation, smoke-free places legislation, treatment/cessation, community-based programs, youth prevention, media awareness, and monitoring and evaluation. Through this comprehensive approach, by 2004-2005 we hope to have decreased the second-hand tobacco smoke exposure rate to the Canadian average or less. This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

Exposure to Environmental Tobacco Smoke in the Last Month, Age 12+, Nova Scotia vs Canada by Sex, 2000



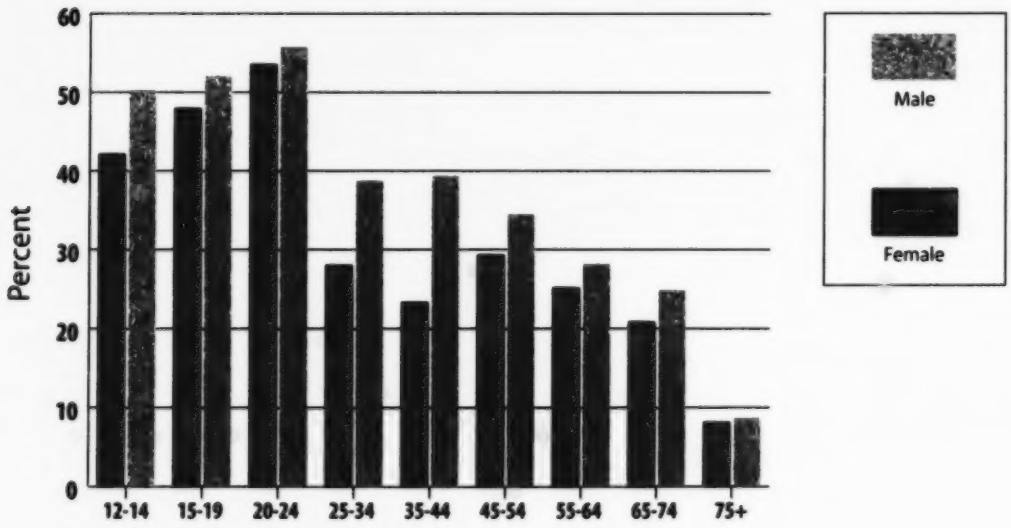
Source: Statistics Canada, Canadian Community Health Survey

Exposure to Environmental Tobacco Smoke in the Last Month, Age 12 - 19, Nova Scotia vs Canada by Sex, 2000



Source: Statistics Canada, Canadian Community Health Survey.

Exposure to Environmental Tobacco Smoke in the Last Month Nova Scotia by Sex and Age Group, 2000



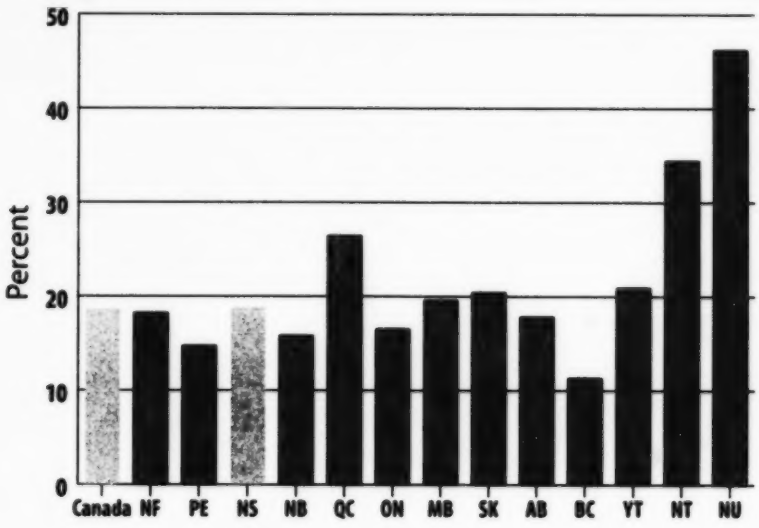
Source: Statistics Canada, Canadian Community Health Survey.
Due to a large coefficient of variance, age 75+ data should be used with caution.

Percent Teenaged Smokers

Definition

Population aged 12 to 19 reporting they are A) current smokers and b) daily smokers, at the time of the interview.

Percent Current Daily and Occasional Teenaged Smokers, Age 12 - 19, Canada and Provinces, 2000



Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Significance – Rationale and Notes for Interpretation

Tobacco use is the leading cause of preventable illness and death in Canada. Health Canada estimates that smoking is responsible for more than 45,000 deaths per year. The indicator is the proportion of those aged 12-19 who report current smoking. Because of the addictive nature of nicotine, youth smoking is of particular concern. It is estimated that approximately eight out of every 10 people who try smoking become habitual smokers.

Technical Specifications

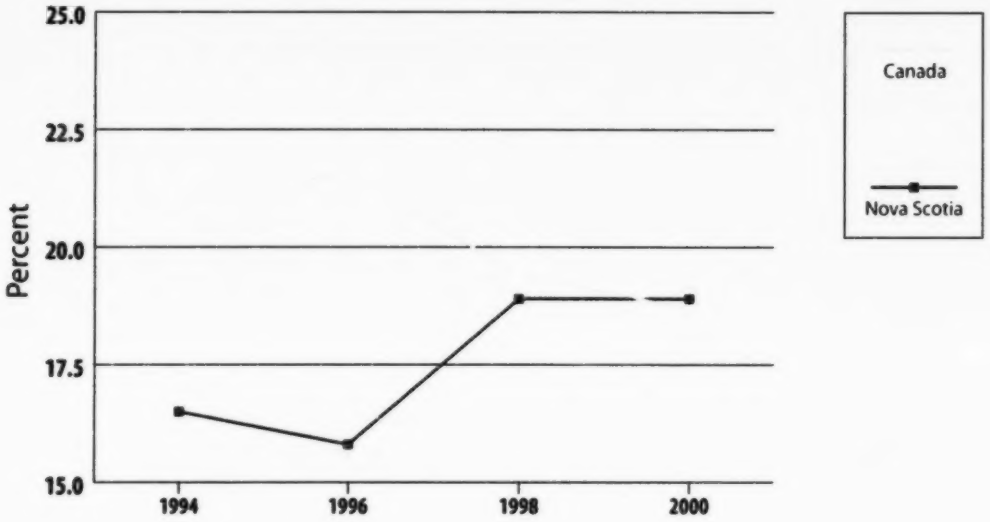
The data are based on the question: At the present time do you smoke cigarettes daily, occasionally or not at all?

Numerator: weighted number of individuals aged 12-19 who report a) currently smoking and b) daily smoking**Denominator:** Total number of non-smoking persons reporting exposure to environmental tobacco smoke in the last month in Canada.

Calculation: (Numerator/Denominator) x 100

Source: Statistics Canada, Canadian Community Health Survey; National Population Health Survey, 1994, 1996, 1998; ISQ

Percent Current Daily and Occasional Teenage Smokers, Age 12 - 19
Nova Scotia vs Canada, 1994 - 2000



Source: Statistics Canada, Canadian Community Health Survey, National Population Health Survey, 1994/96/98; ISQ.
Due to a large coefficient of variance, NS data for 1994 – 1998 should be used with caution.

Disclosures

Exclusions: CCHS survey frame exclusions: The target population of the CCHS includes household residents in all provinces and territories; with the principal exclusion of populations on Indian Reserves, Canadian Forces Bases, and some remote areas. There will be one randomly selected respondent per household, although planned oversampling of youths will result in a second member of certain households being interviewed. For the first collection cycle only those 12 years of age and over are eligible for selection, although it is expected that in future cycles child-specific content will be included. Further info available at: http://www.statcan.ca/english/concepts/health/ccshinfo.htm#sam

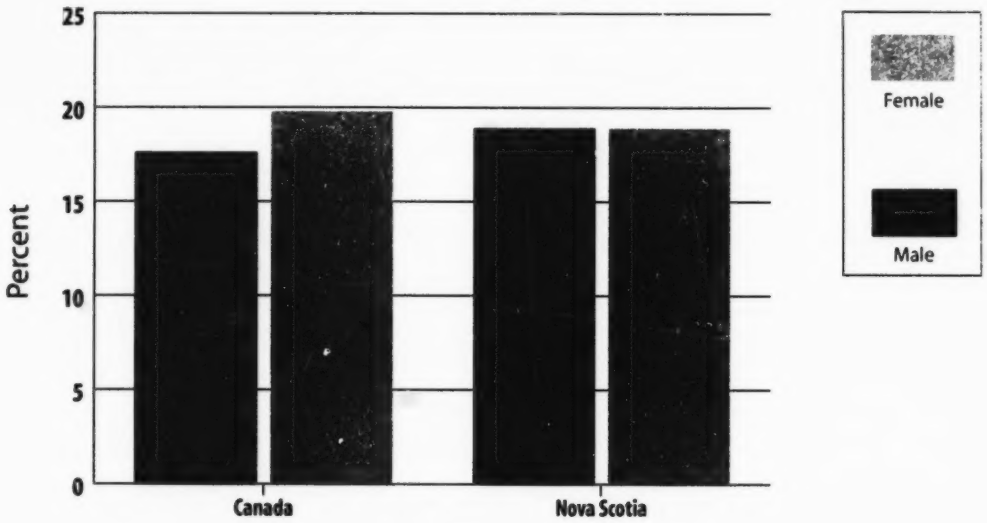
Limitations: The following data points should be used with caution or were unavailable due to a large coefficient of variance:

- Graph: Percent Current Daily and Occasional Teenage Smokers, Age 12 - 19, Nova Scotia vs Canada, Data Point(s): NS 1994, 1996, 1998
- Graph: Percent Current Daily Teenage Smokers, Age 12 - 19, Canada and Provinces, Data Point(s): PE and YT
- Graph: Percent Current Daily Teenage Smokers, Age 12 - 19, Nova Scotia vs Canada, Data Point(s): NS 1994, 1996, 1998

- Graph: Percent Current Daily and Occasional Teenage Smokers, Age 12 +, Nova Scotia vs Canada by Age Groups, Data Point(s): NS and Canada, age 12-14
- Graph: Percent Current Daily and Occasional Smokers, Nova by Age and Sex, Data Point(s):Ages 12 – 14, 65-74, 75+
- Graph: Percent Current Daily Smokers, Nova by Age and Sex, Data Point(s): Ages 12 – 14, 65-74, 75+

Departures from PIRC Requirements: None

Percent Current Daily and Occasional Teenaged Smokers, Age 12 – 19, Nova Scotia vs Canada by Sex, 2000

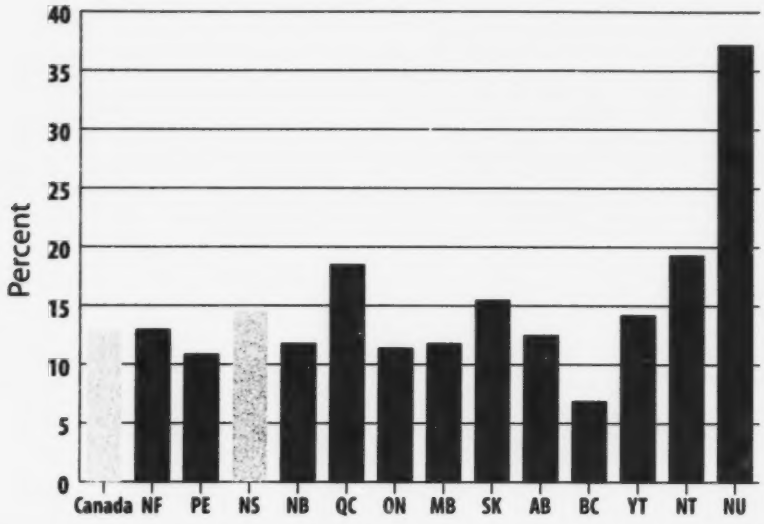


Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Plans for Future Reporting

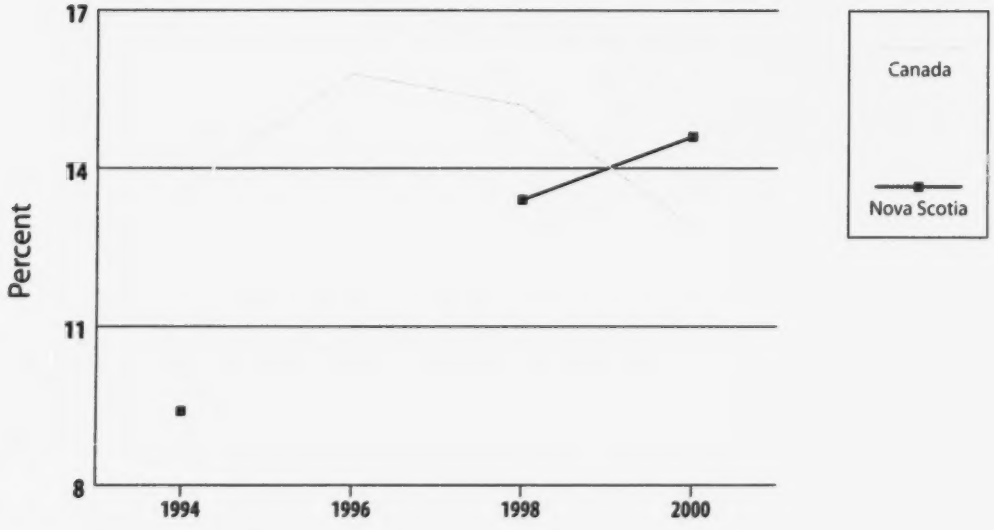
Our aim is to decrease the percentage of youth who smoke. Strategies to achieve this target include continued implementation of all components of the Comprehensive Tobacco Strategy. This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

Percent Daily Teenage Smokers, Age 12 - 19
Canada and Provinces, 2000



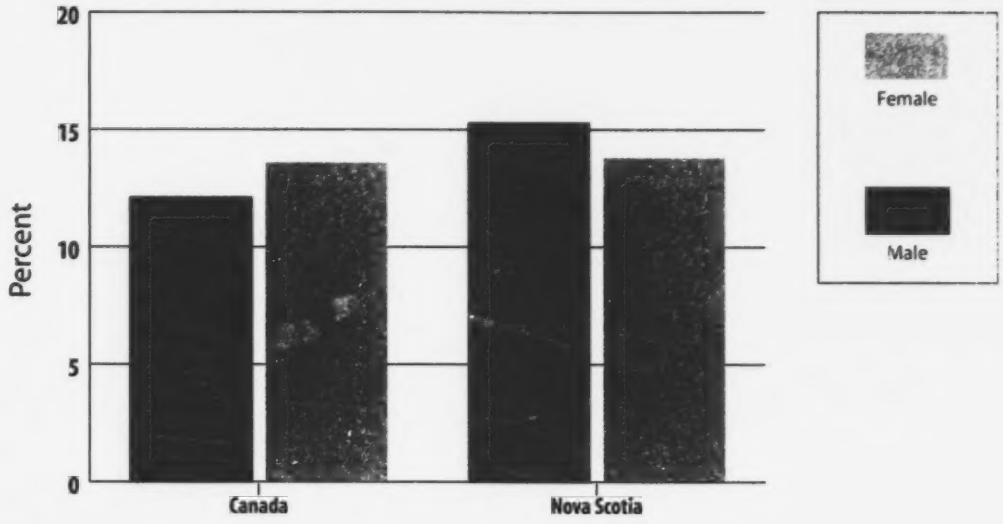
Source: Statistics Canada, Canadian Community Health Survey, ISQ.
Due to a large coefficient of variance, PE and YT data should be used with caution.

Percent Daily Teenaged Smokers, Age 12 - 19
Nova Scotia vs Canada, 1994 - 2000



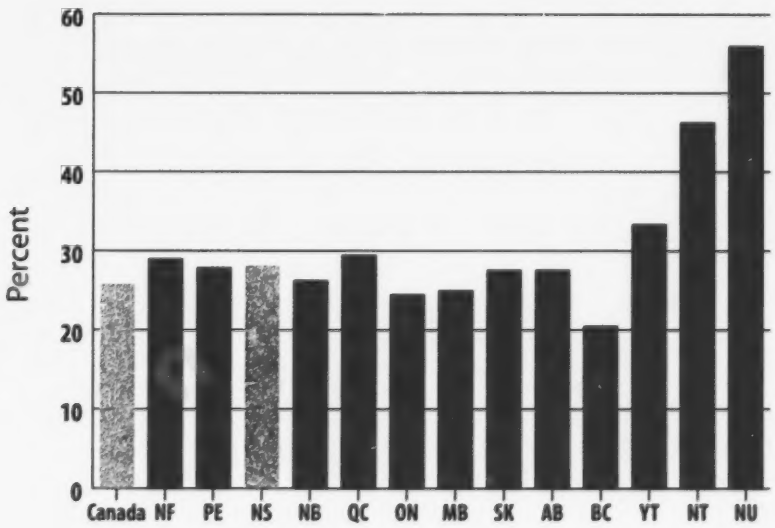
Source: Statistics Canada, Canadian Community Health Survey, National Population Health Survey, 1994/96/98; ISQ.
Due to a large coefficient of variance NS data were unavailable for the 12-19 daily smoker age range in 1996.

Percent Daily Teenaged Smokers, Age 12 – 19
Nova Scotia vs Canada by Sex, 2000



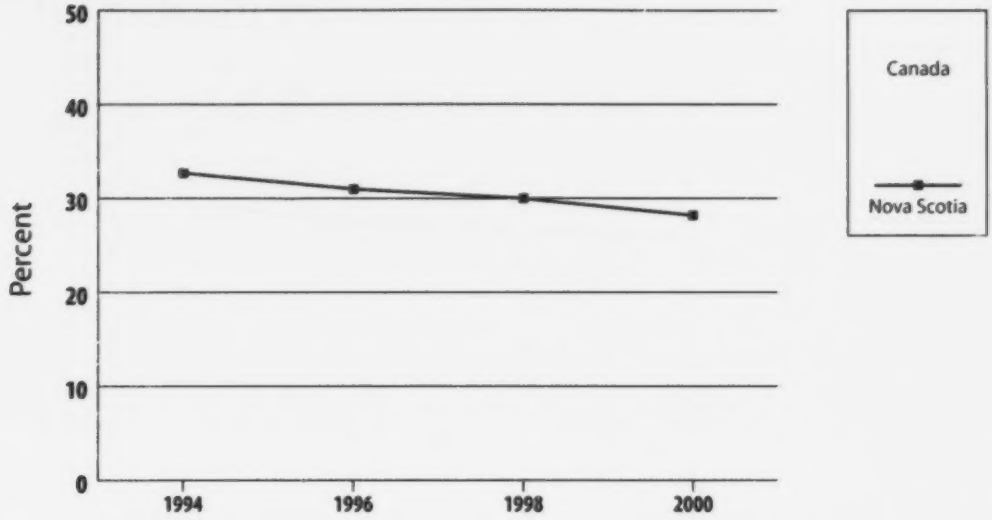
Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Percent Current Daily and Occasional Smokers, Age 12+
Canada and Provinces, 2000



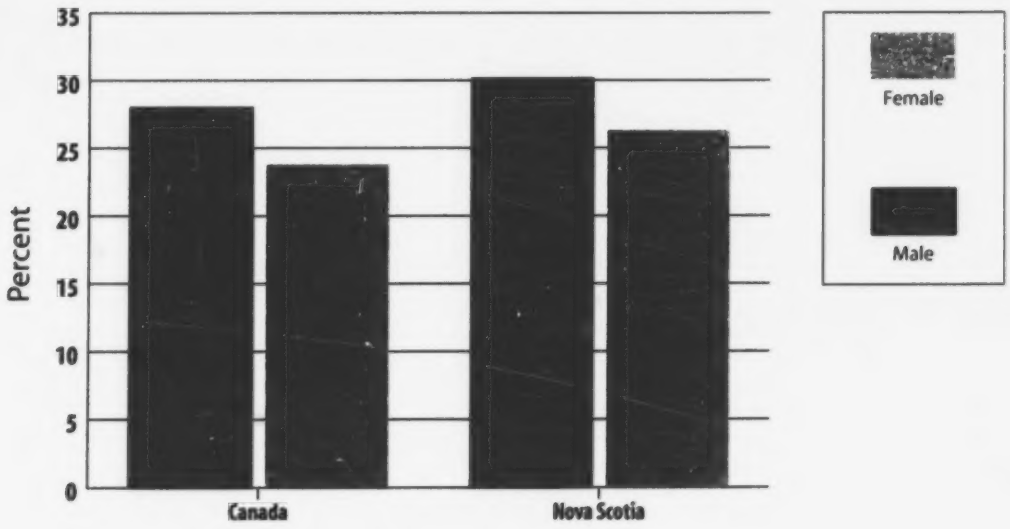
Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Percent Current Daily and Occasional Smokers, Age 12+ Nova Scotia vs Canada, 1994 - 2000



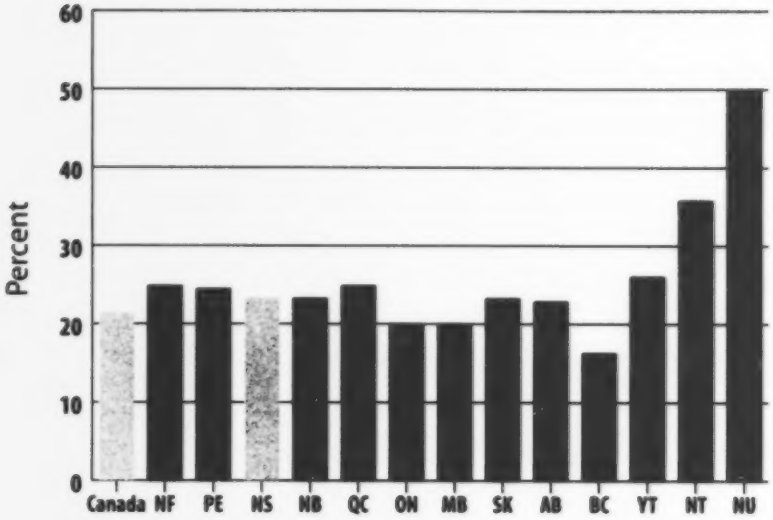
Source: Statistics Canada, Canadian Community Health Survey, National Population Health Survey, 1994/96/98; ISQ.

Percent Current Daily and Occasional Smokers, Age 12+ Nova Scotia vs Canada by Sex, 2000



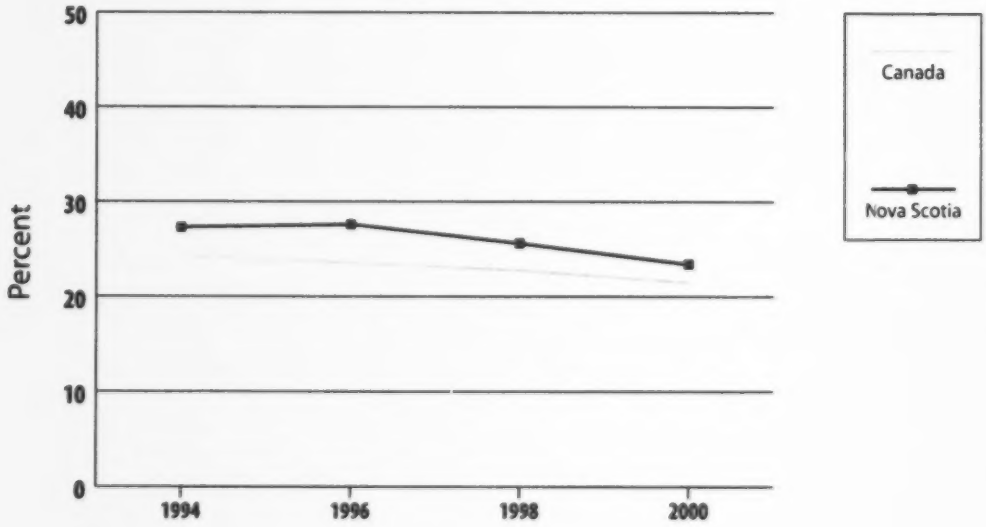
Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Percent Daily Smokers, Age 12+
Canada and Provinces, 2000



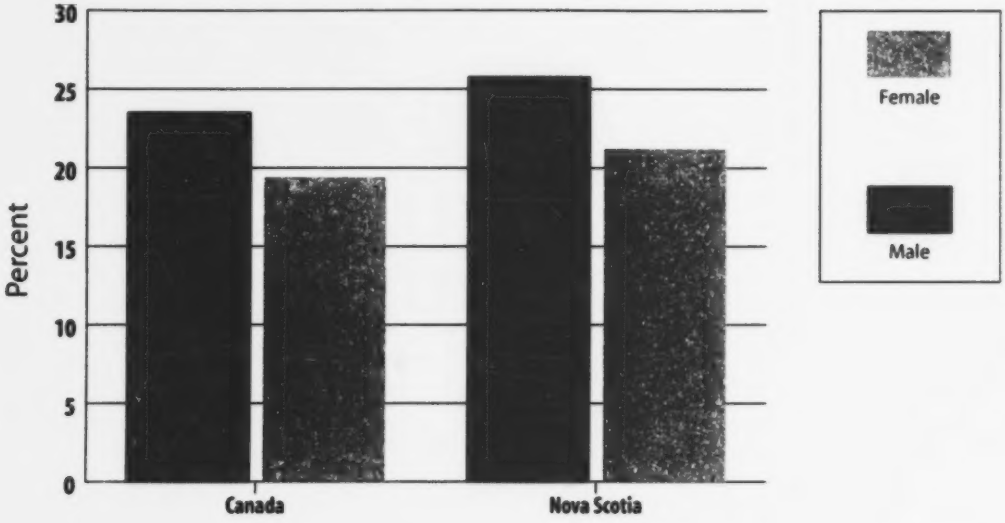
Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Percent Daily Smokers, Age 12 +
Nova Scotia vs Canada, 1994 - 2000



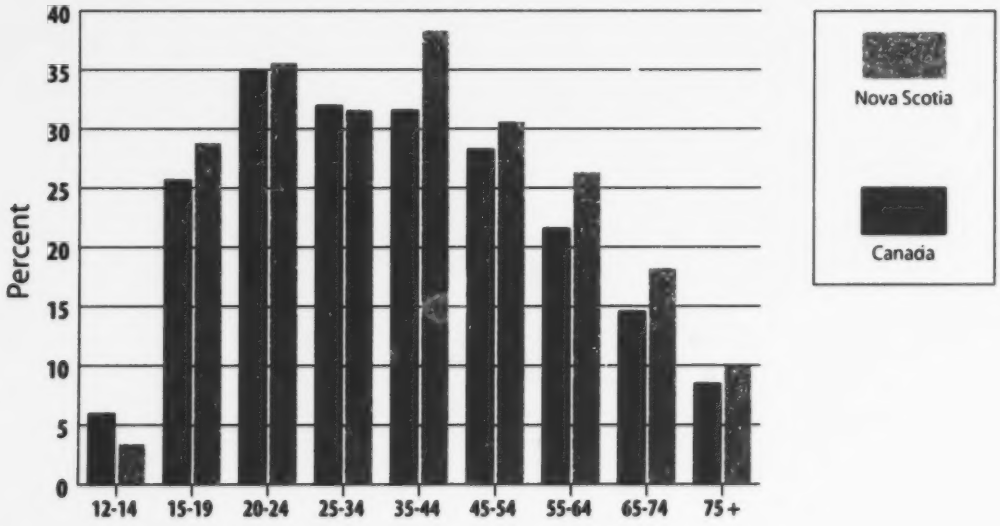
Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Percent Daily Smokers, Age 12+
Nova Scotia vs Canada by Sex, 2000



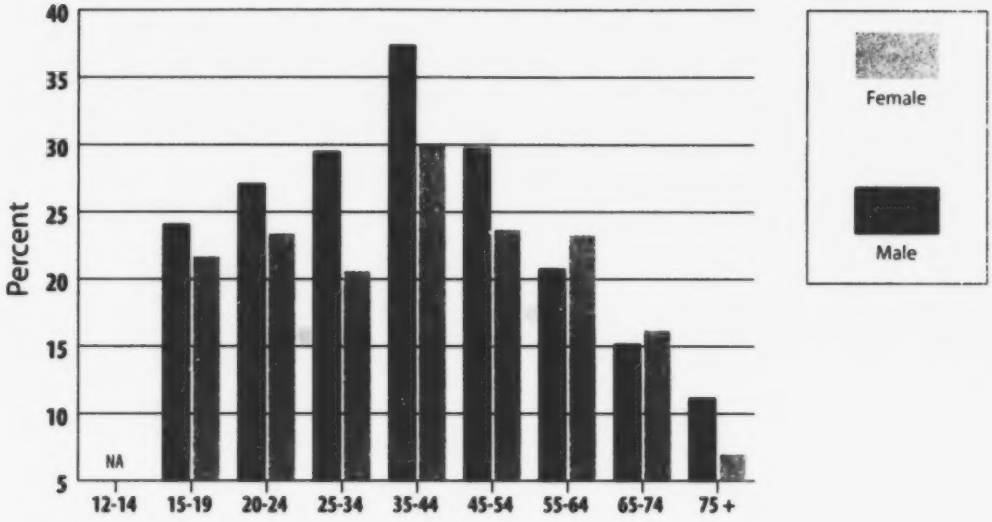
Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Percent Current Daily and Occasional Smokers, Age 12+
Nova Scotia vs Canada by Age Groups, 2000



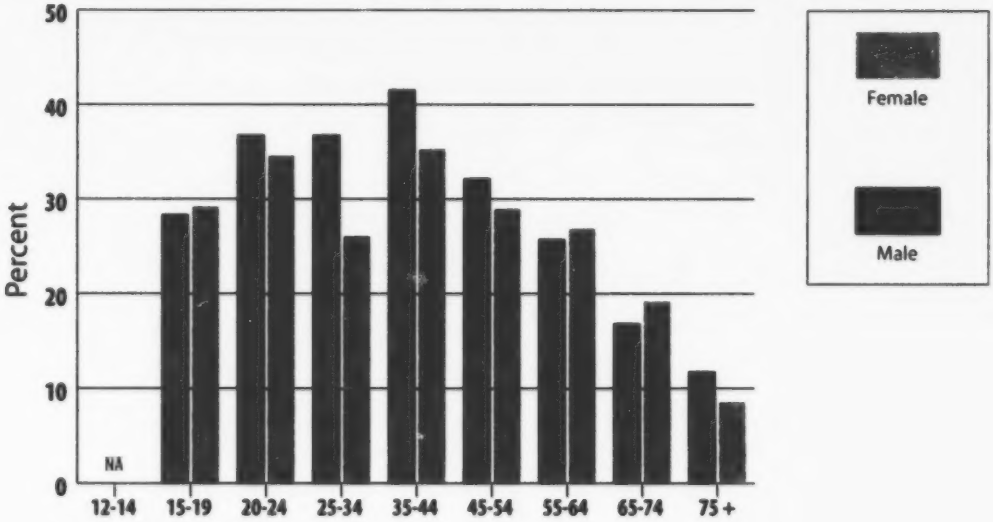
Source: Statistics Canada, ISQ.
Due to a large coefficient of variance, age 12 – 14 data should be used with caution.

Percent Current Daily and Occasional Smokers
Nova Scotia by Sex and Age Groups, 2000



Source: Statistics Canada, Canadian Community Health Survey.
Due to a large coefficient of variance, age 12 –14 data was not available. Data in the 65-74 and 75+ age groups should be used with caution.

Percent Daily Smokers
Nova Scotia by Sex and Age Groups, 2000



Source: Statistics Canada, Canadian Community Health Survey.
Due to a large coefficient of variance, age 12 –14 data was not available. Data in the 65-74 and 75+ age groups should be used with caution.

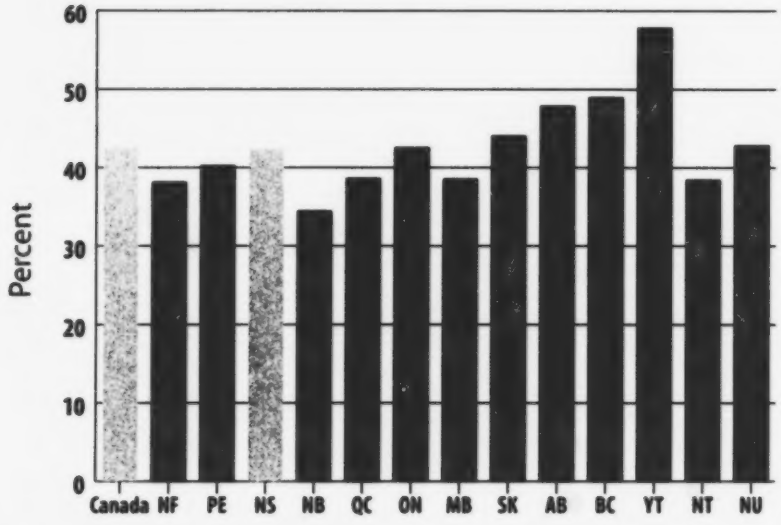
190 Physical Activity

Definition

a) Population aged 12 and over who report a physical activity index of "active".

b) Population aged 12 and over who report a physical activity index of "inactive".

Percent Physically and Moderately Active, Age 12+
Canada and Provinces, 2000



Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Significance – Rationale and Notes for Interpretation

Maintaining physical activity is associated with a range of health benefits. Many studies have shown that regular physical activity confers major heart health benefits and that inactivity is a major risk factor for heart disease. Recent evidence from the National Population Health Survey supports this conclusion, and also shows that physically active individuals are less likely to become depressed.

Technical Specifications

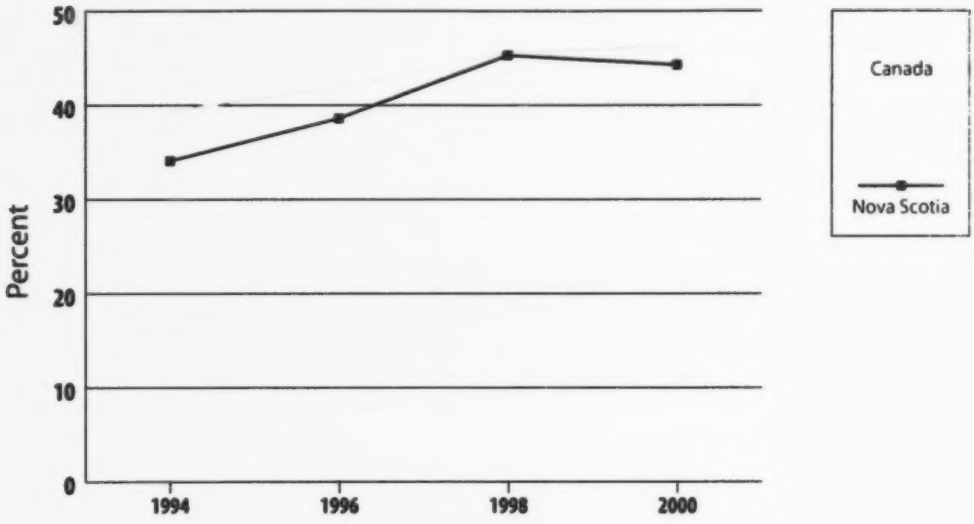
Numerator: a) Number of individuals reporting combined active (≥3.0 kcal/kg/day) and moderately active levels of physical activity (1.5-2.9 kcal/kg/day)

b) Number of individuals reporting an inactive level of physical activity (<1.5 kcal/kg/day)

Denominator: Total population aged 12 and over

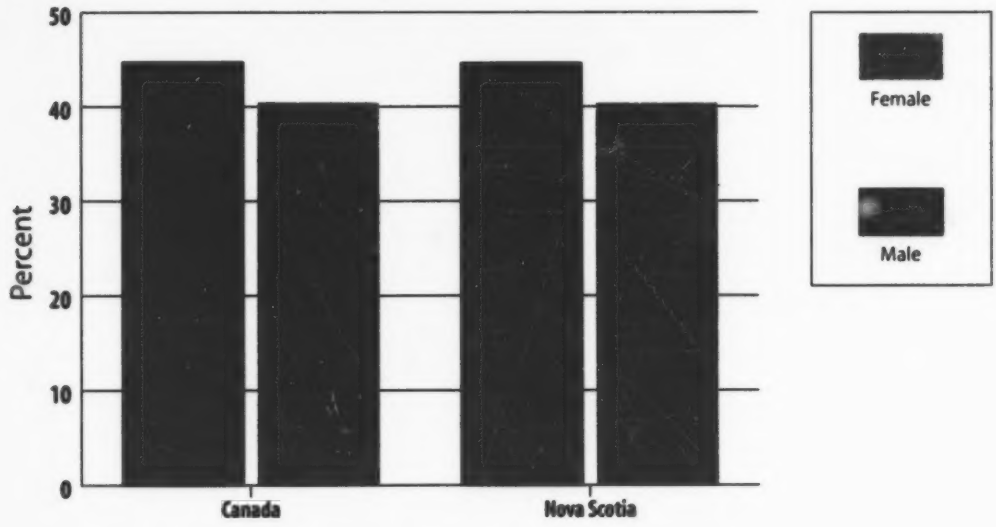
Calculation: (Numerator/Denominator) x 100

Percent Physically and Moderately Active, Age 12+
Nova Scotia vs Canada, 1994 - 2000



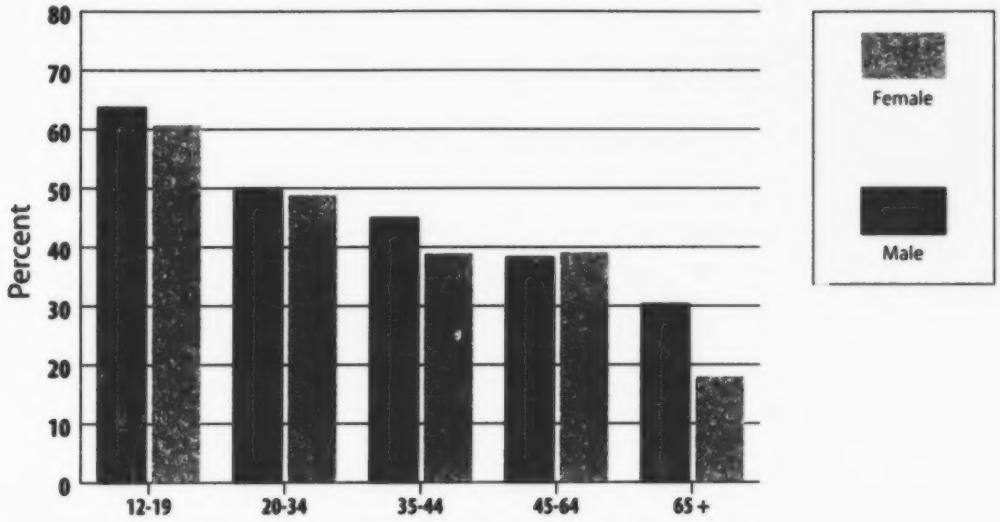
Source: Statistics Canada, Canadian Community Health Survey, National Population Health Survey, 1994/96/98; ISQ.

Percent Physically and Moderately Active, Age 12+
Nova Scotia vs Canada by Sex, 2000



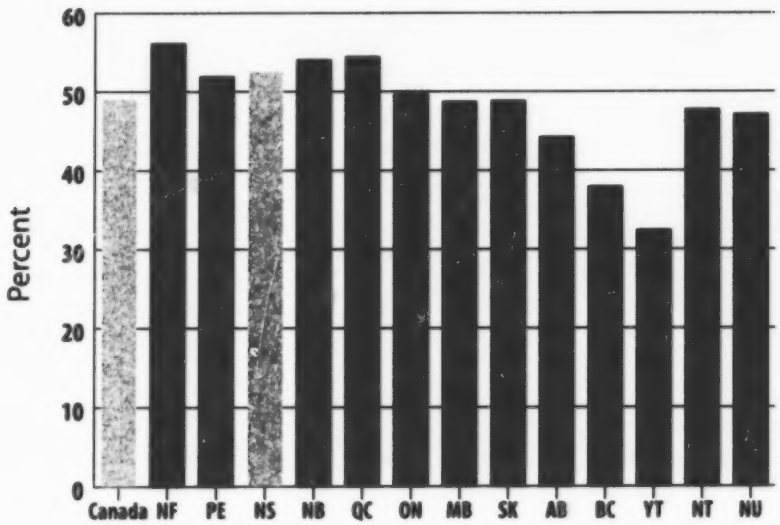
Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Percent Physically and Moderately Active, Age 12+ Nova Scotia by Sex and Age Groups, 2000



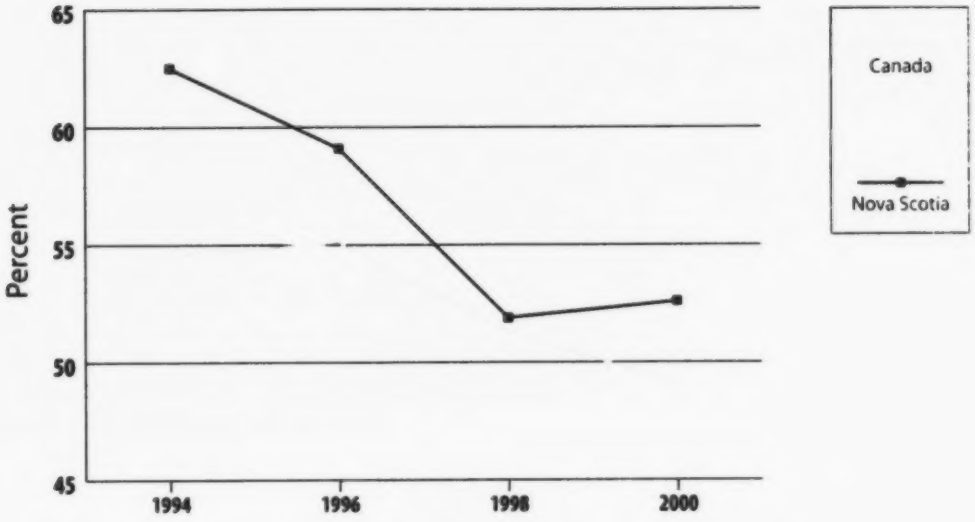
Source: Statistics Canada, Canadian Community Health Survey.

Percent Physically Inactive, Age 12+ Canada and Provinces, 2000



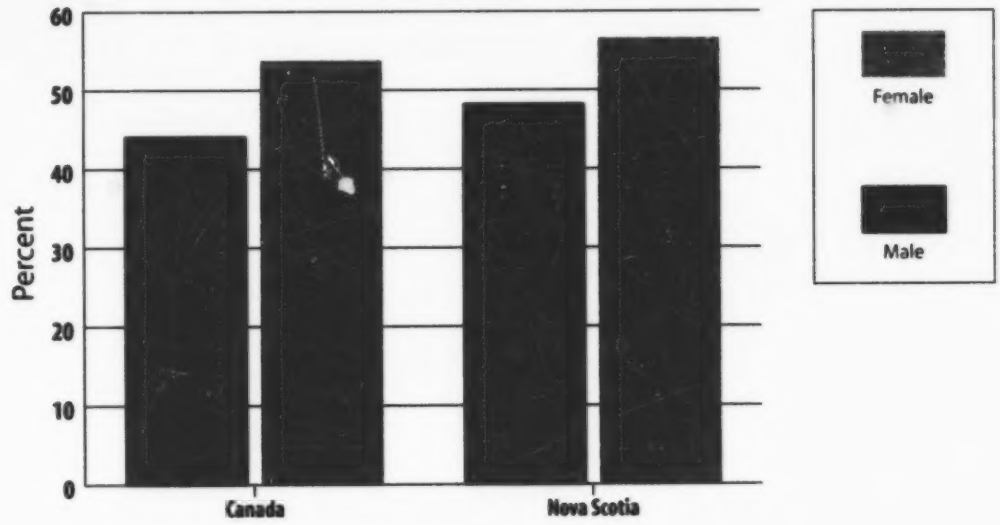
Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Percent Physically Inactive, Age 12+
Nova Scotia vs Canada, 1994 - 2000



Source: Statistics Canada, Canadian Community Health Survey, National Population Health Survey, 1994/96/98; ISQ

Percent Physically Inactive, Age 12+
Nova Scotia vs Canada by Sex, 2000

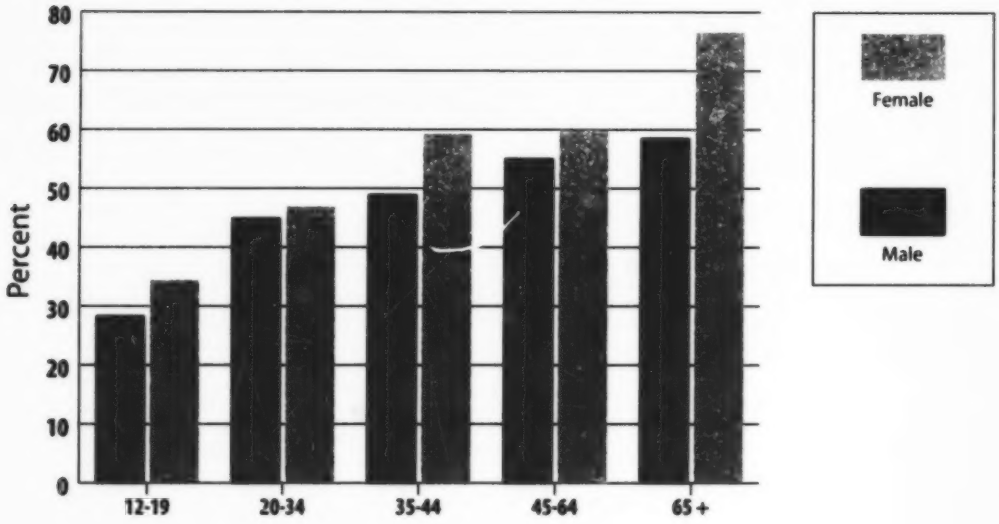


Source: Statistics Canada, Canadian Community Health Survey, ISQ.

The physical activity index is based on an individual's energy expenditure (EE). EE is calculated using the frequency and duration per session of physical activity, as well as the MET (metabolic) value. The MET is the energy cost of the activity expressed as kilocalories expended per kilogram of body weight per hour of activity, doing a physical activity during the past 3 months, the number of times and time spent on each activity.

A physical activity index is calculated to determine energy expenditure values (EE). The derived physical activity index results in the following categories:

Percent Physically Inactive, Age 12 +
Nova Scotia by Sex and Age, 2000



Source: Statistics Canada, Canadian Community Health Survey.

Description

Definition

Active	Average 3.0 +kcal/kg/day of energy, or exercise required for cardiovascular health benefit
Moderate	Average 1.5-2.9 kcal/kg/day, some health benefits but little cardiovascular
Inactive	Energy expenditure below 1.5 kcal/kg/day

Source: Statistics Canada, Canadian Community Health Survey – Cycle 1.1, 2000 National Population Health Survey, 1994, 1996, 1998; ISQ

Disclosures

Exclusions: CCHS survey frame exclusions: The target population of the CCHS includes household residents in all provinces and territories; with the principal exclusion of populations on Indian Reserves, Canadian Forces Bases, and some remote areas. There will be one randomly selected respondent per household, although planned oversampling of youths will result in a second member of certain households being interviewed. For the first collection cycle only those 12 years of age and over are eligible for selection, although it is expected that in future cycles child-specific content will be included. Further info available at: http://www.statcan.ca/english/concepts/health/ccshinfo.htm#sam

Limitations: N/A

Departures from PIRC Requirements: None

Plans for Future Reporting

Maintaining regular physical activity is associated with many benefits including cardiovascular and mental health. The province's goal is to decrease to 46.7% the percentage of physically inactive people through joint initiatives such as the Provincial Physical Activity Strategy for Children and Youth (PACY), the Chronic Disease-prevention Strategy, and curriculum revisions to increase physical activity in schools. This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

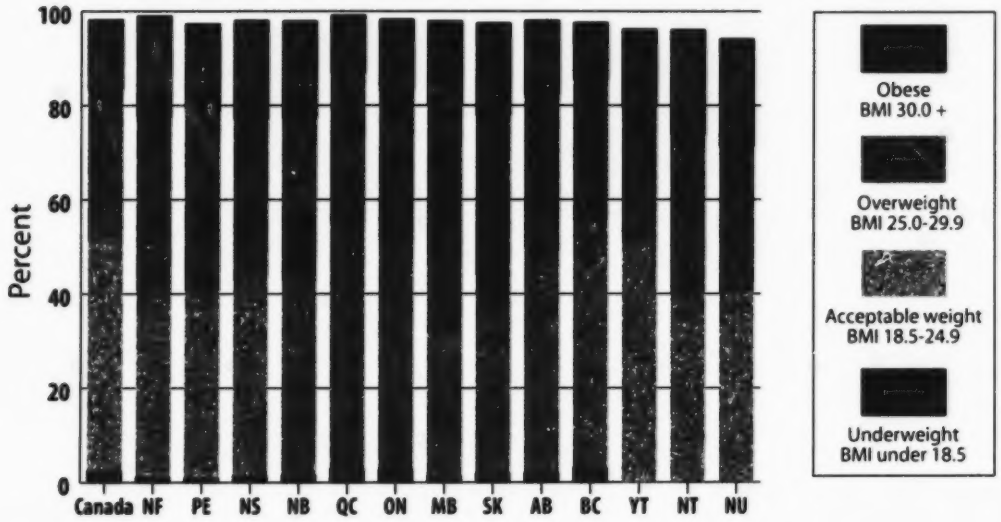
196 Body Mass Index

Definition

Percent of adults who report a [computed] body mass index in specified categories, ranging from underweight to obese.

Body mass index (BMI) is based on self-reported height and weight, and calculated for persons 20 to 64 years old, excluding pregnant women. Due to different rates of growth for individuals under 20 years of age, the standard BMI is not considered a suitable indicator for this group. BMI is calculated as weight (in kilograms) divided by height (in meters) squared.

Body Mass Index
Canada and Provinces, 2000



Source: Statistics Canada, Canadian Community Health Survey, ISQ.
Due to a large coefficient of variance, underweight data for NF and PE should be used with caution and were not available for YT, NT and NU

Significance – Rationale and Notes for Interpretation

Obesity has been identified as a major risk factor contributing to a number of chronic illnesses such as diabetes and heart disease. BMI is the most common method of determining if an individual's weight is in a healthy range. Data on height and weight are based on self-report survey responses. Individuals may not always report reliably. The effect of excess weight as a risk factor for various diseases increases with BMI above the threshold of 25; this is a widely used standard in the health literature.

Technical Specifications

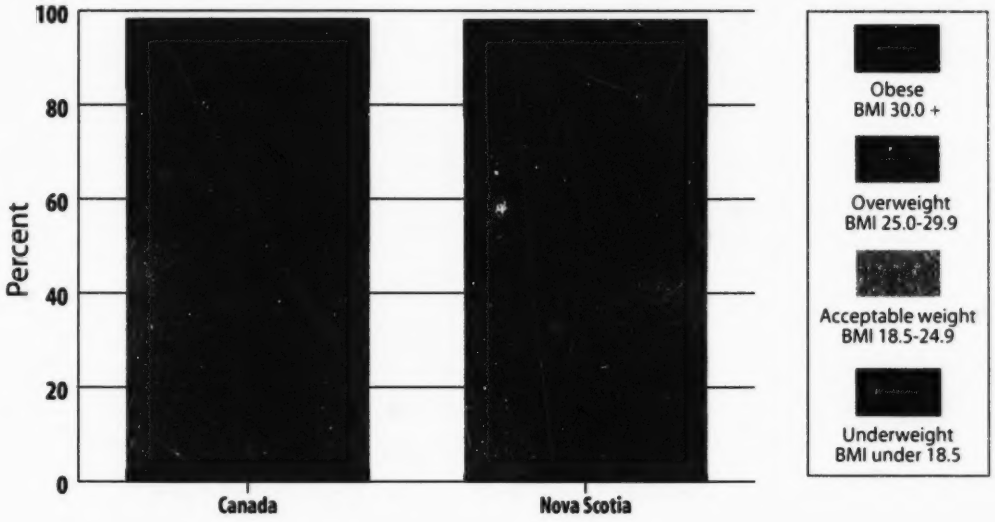
Numerators: population aged 20 to 64, reporting a BMI in each of the four categories shown under requirements below

Denominator: total population aged 20 to 64

Calculation: (Numerator/Denominator) x 100

Source: Statistics Canada,, Canadian Community Health Survey – Cycle 1.1, 2000; National Population Health Survey, 1994, 1996, 1998; ISQ

Body Mass Index, Both Sexes
Nova Scotia vs Canada, 2000



Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Disclosures

Exclusions: individuals less than 20 years of age as well as CCHS survey frame exclusions. CCHS survey frame exclusions : The target population of the CCHS includes household residents in all provinces and territories; with the principal exclusion of populations on Indian Reserves, Canadian Forces Bases, and some remote areas. There will be one randomly selected respondent per household, although planned oversampling of youths will result in a second member of certain households being interviewed. For the first collection cycle only those 12 years of age and over are eligible for selection, although it is expected that in f uture cycles child-specific content will be included. Further info available at: http://www.statcan.ca/english/concepts/health/ccshinfo.htm#sam

Limitations: The following data points should be used with caution or were unavailable due to a large coefficient of variance:

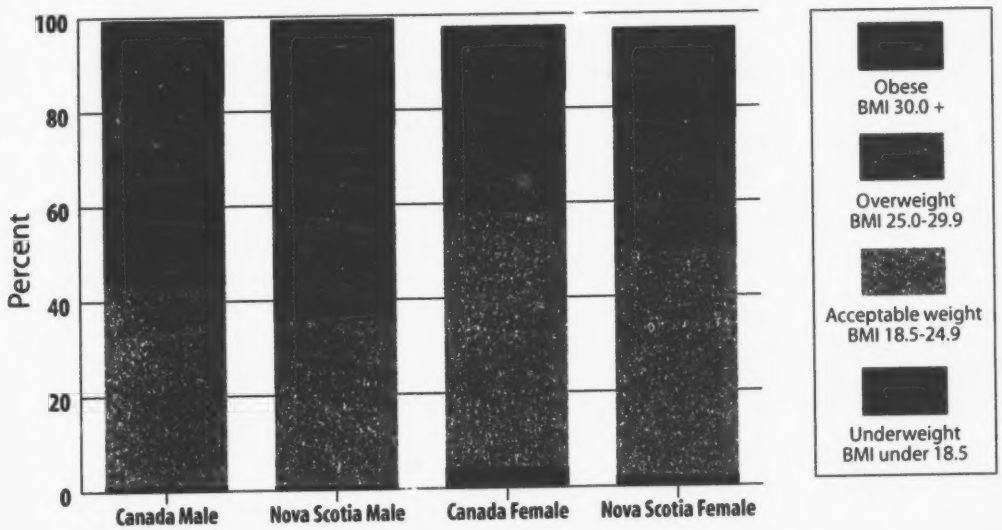
- Graph: Body Mass Index, Canada and Provinces, Data Point(s): Underweight NF,PE (used with caution) and YT,NT and NU (unavailable).
- Graph: Body Mass Index, Nova Scotia vs Canada, Data Point(s): Underweight NS male and female
- Graph: Obese: Body Mass Index, Nova Scotia by Sex and Age, Data Point(s): Age 20-24 male and female.

Departures from PIRC Requirements: None

Plans for Future Reporting

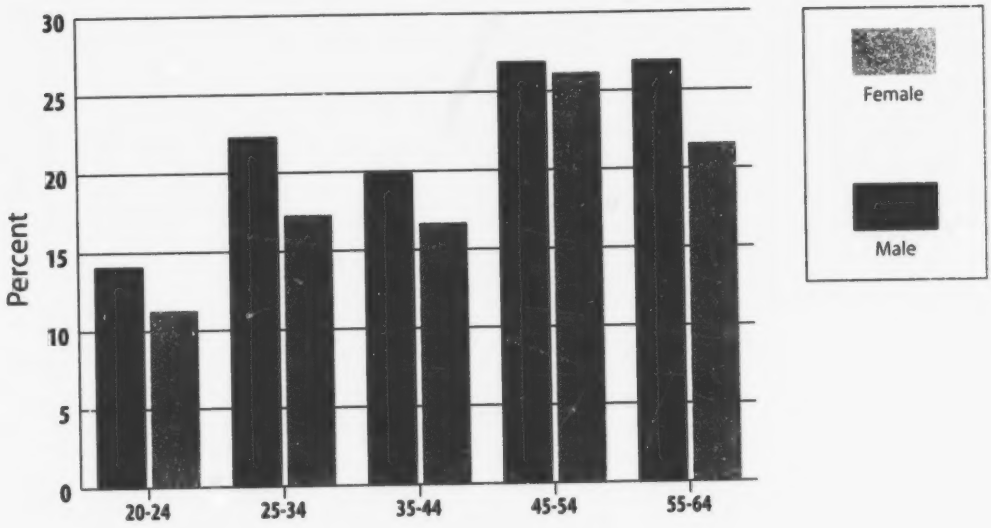
By 2004-2005, with partners at multiple levels and in multiple sectors, we aim to decrease to 52% the number of Nova Scotians whose body weight increases their risk for health problems. Towards this end, the Department of Health has continued to develop and strengthen strategic linkages in the community and other sectors. In addition, the Department will collaborate with the Nova Scotia Alliance for Healthy Eating and local public health services to promote behaviours, capacity and polices that support and protect healthy eating and physical activity. This indicator will continue to be reported in the standard manner as defined by Statistics Canada.

Body Mass Index
Nova Scotia vs Canada by Sex, 2000



Source: Statistics Canada, Canadian Community Health Survey, ISQ.
Due to a large coefficient of variance, underweight data for NS should be used with caution.

Obese: Body Mass Index over 30
Nova Scotia by Sex and Age Groups, 2000



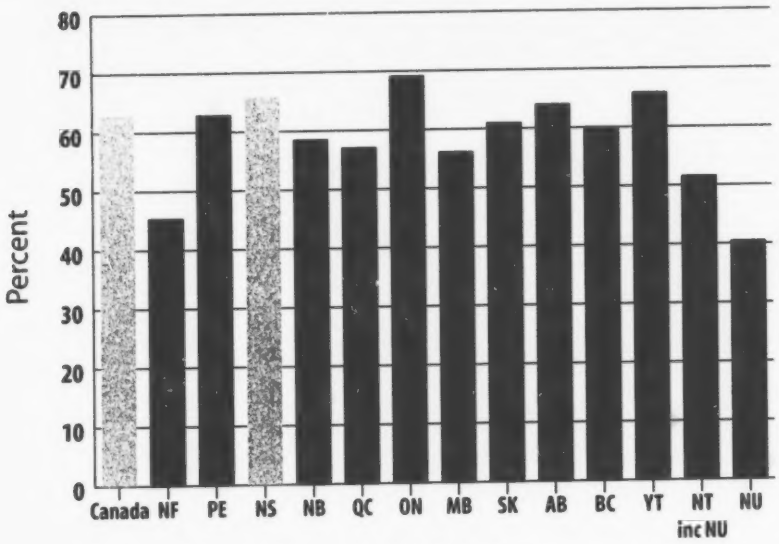
Source: Statistics Canada, Canadian Community Health Survey.
Due to a large coefficient of variance, data in the 20-24 age range should be used with caution.

200 Immunization for Influenza in the Past Year, Age 65+

Definition

Population over 65 who report having a flu shot in the past year

People Reporting Immunization for Influenza in the Past Year, Age 65+, Canada and Provinces, 2000



Source: Statistics Canada, Canadian Community Health Survey; ISQ.

Significance – Rationale and Notes for Interpretation

The indicator reports time of last immunization. Individuals aged 65 and over who have not been immunized in the past year are asked why not. Data are available from the CCHS for a subset of the sample, but will allow for estimates at provincial and national levels.

Technical Specifications

This indicator is usually reported as the proportion of individuals reporting immunization within certain time frames. The questions asked are: Have you ever had a flu shot? When did you have your last flu shot?

Numerator: estimated population 65+ reporting immunization: <1 year ago; 1 or more years ago; never

Denominator: total population aged 65+

Calculation: (Numerator/Denominator) x 100

Source: Statistics Canada, Canadian Community Health Survey (sub sample)– Cycle 1.1, 2000; ISQ

Disclosures

Exclusions: CCHS survey frame exclusions : The target population of the CCHS includes household residents in all provinces and territories; with the principal exclusion of populations on Indian Reserves, Canadian Forces Bases, and some remote areas. There will be one randomly selected respondent per household, although planned oversampling of youths will result in a second member of certain households being interviewed. For the first collection cycle only those 12 years of age and over are eligible for selection, although it is expected that in future cycles child-specific content will be included. Further info available at: http://www.statcan.ca/english/concepts/health/ccshinfo.htm#sam

Limitations: The following data points should be used with caution or were unavailable due to a large coefficient of variance:

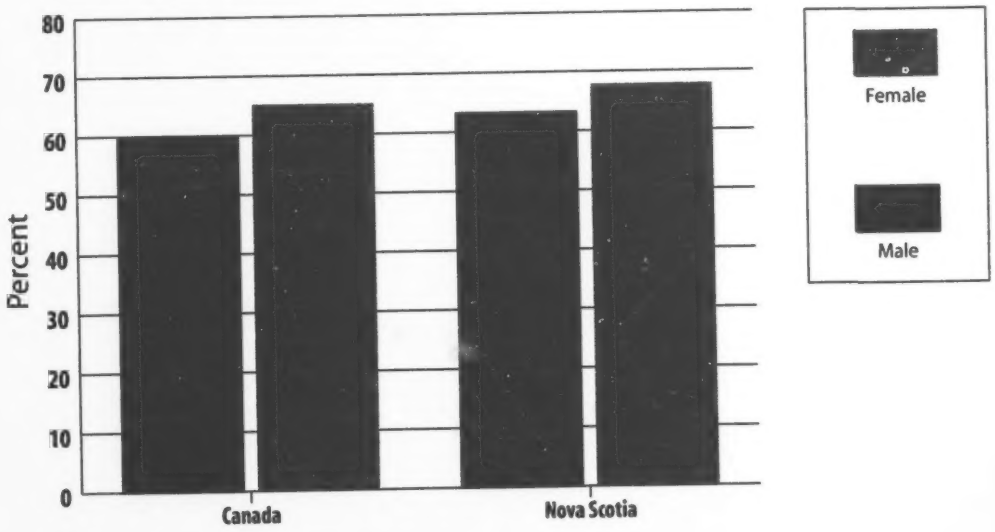
- Graph: Obese: People Reporting Immunization for Influenze, Ages 65-74, 75+, Nova Scotia vs Canada, Data Point(s): Nova Scotia "1 year or more ago" age 65-74 (unavailable).

Departures from PIRC Requirements: None

Plans for Future Reporting

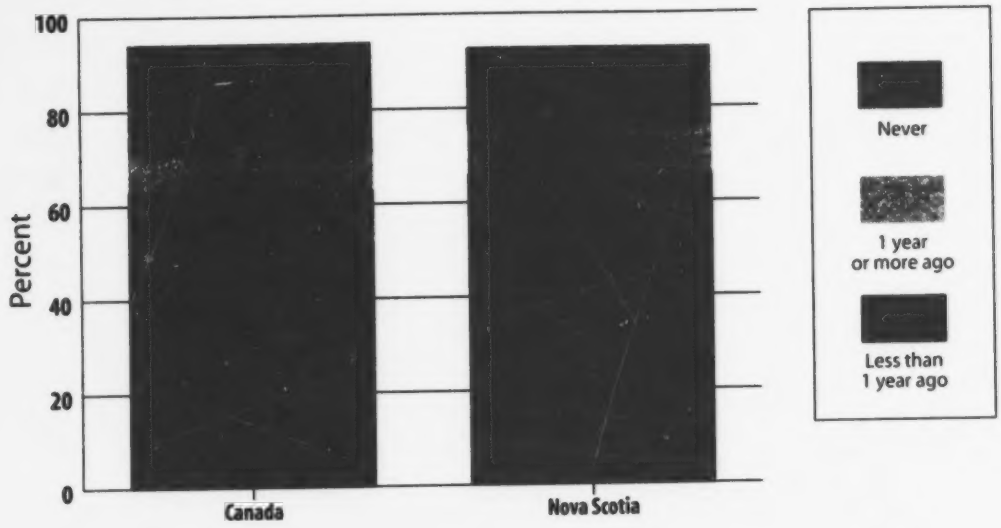
This indicator will continue to be reported in the standard manner as defined by Statistics Canada.[1]

Percent Reporting Immunization for Influenza in the Past Year, Age 65+, Nova Scotia vs Canada by Sex, 2000



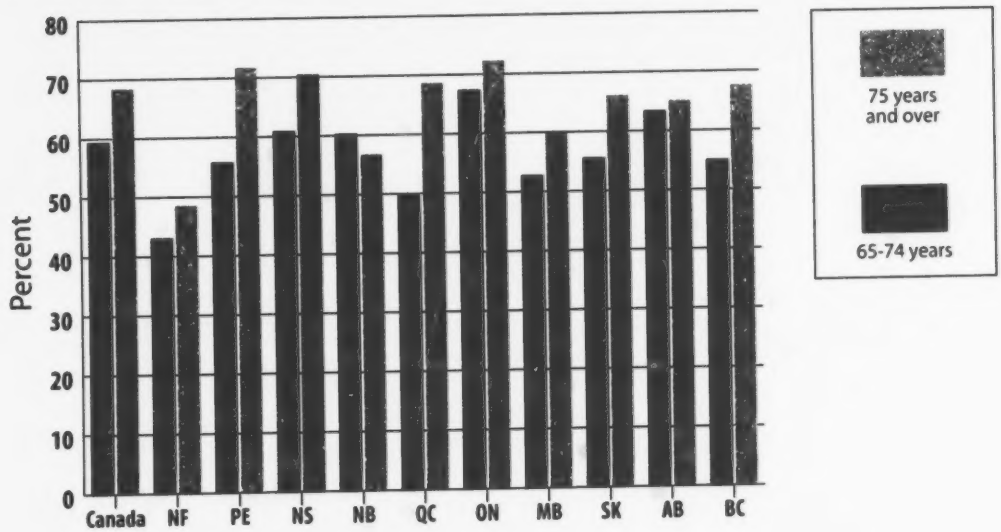
Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Percent Reporting Immunization for Influenza, Age 65+ Nova Scotia vs Canada, 2000



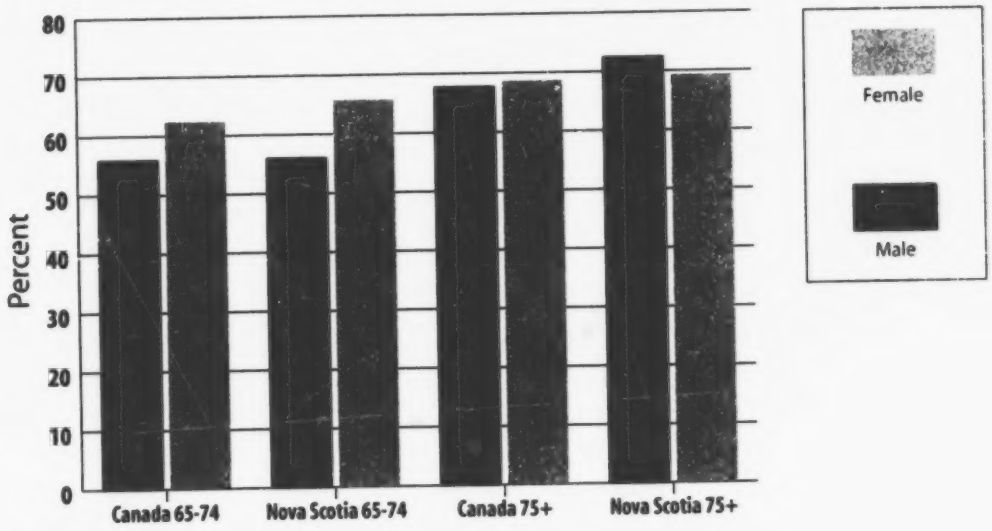
Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Percent Reporting Immunization for Influenza in the Last Year, Ages 65-74 and 75+, Canada and Provinces, 2000



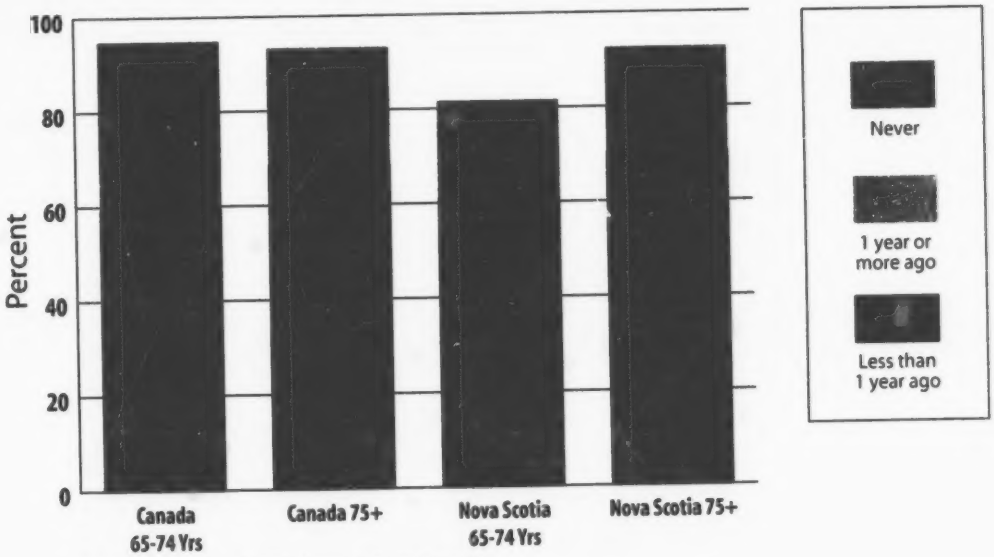
Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Percent Reporting Immunization for Influenza in the Past Year, Ages 65-74 and 75+, Nova Scotia vs Canada by Sex, 2000



Source: Statistics Canada, Canadian Community Health Survey, ISQ.

Percent Reporting Immunization for Influenza, Ages 65-74 and 75+, Nova Scotia vs Canada, 2000



Source: Statistics Canada, Canadian Community Health Survey, ISQ.
Due to a large coefficient of variance, 1 year or more ago data in the 65-74 age range was unavailable.

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2 IBID

3 OECD

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5 OECD

6 Ellison LF, Gibbons L, and the Canadian Cancer Survival Analysis Group. Five-year relative survival from prostate, breast, colorectal and lung cancer. Health Reports 2001: 13(1), 23-34.

7 IBID

8 IBID

9 Hosmer DW, Lemeshow S. Confidence interval estimates of an index of quality performance based on logistic regression models. Statistics in Medicine 1995; 14:2161-2172.

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10 IBID

11 Statistics Canada – Cancer Incidence (CCR Shelf tables – IARC rules)

12 IBID

13 IBID

14 IBID

15 For PYLL age<75, various international health publications. For PYLL <70, Health Indicators 1999 (Statistics Canada), Statistical Report on the Health of Canadians (1999).

16 IBID

17 IBID

18 IBID

19 IBID

20 IBID

21 IBID

22 IBID

23 Brown AD, Anderson GM. Methods for measuring clinical utilization and outcomes. In Baker GR, Anderson GM, Brown AD et al (eds.) The Hospital Report '99. Health Care Performance Measurement Group, University of Toronto, Toronto, 1999.

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Hosmer, D.W., Lemeshow, S. Confidence interval estimates of an index of quality performance based on logistic regression models. Statistics in Medicine, 1995; 14:2161-2172.